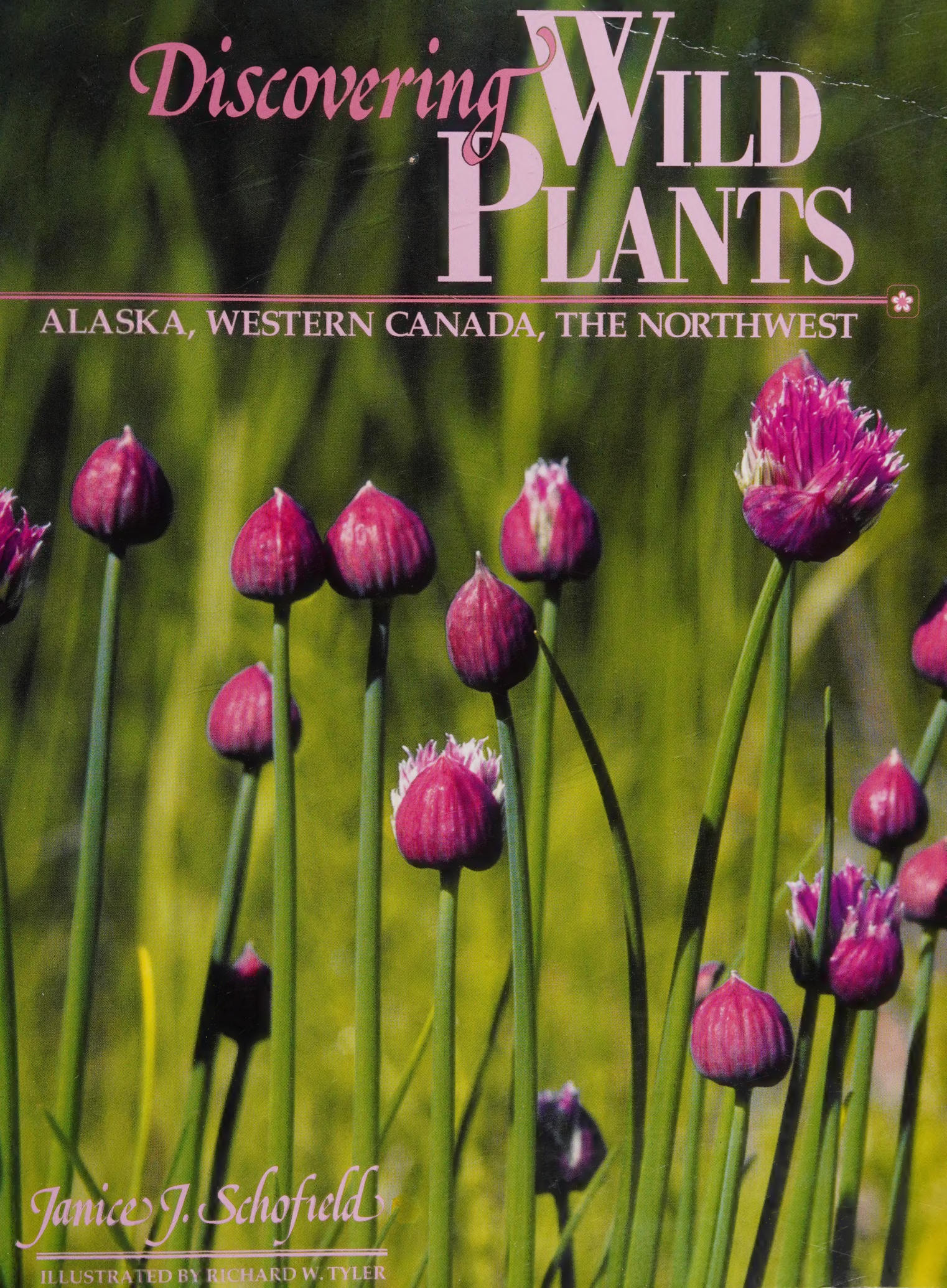
Discovering Wild Plants

ALASKA, WESTERN CANADA, THE NORTHWEST



Janice J. Schofield

ILLUSTRATED BY RICHARD W. TYLER

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ALASKA, WESTERN CANADA, THE NORTHWEST

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ALASKA, WESTERN CANADA, THE NORTHWEST

BY JANICE J. SCHOFIELD
ILLUSTRATED BY RICHARD W. TYLER

EATON™
New Zealand • Alaska

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DISCLAIMER:

This book is not intended to replace the advice of a physician. Neither the author nor the publisher claims that techniques described in this guide will cure any illness.

Just as prescription medicines can have different effects on individuals, so too can herbs. Proceed slowly if you are taking any substance for the first time. Be sensitive to the effect it has on your body, and discontinue use immediately if you experience adverse reactions or allergies. Combining herbs and prescription medicines may be harmful.

Front Cover: Wild chives *(Allium schoenoprasium)* grow in meadows and grassy slopes from British Columbia to California. (Janice J. Schofield)

Back Cover: Tree hosts for sulfur shelf *(Laetiporus sulphureus,* also known as *Polyporus sulphureus)* vary from spruce and eucalyptus to oak. This fungus ranges from Alaska to California. (Norma W. Dudiak)

Dedicated to the plants that green our earth and demonstrate the oneness of all life.

CONTENTS

NOTE TO READERS:

This book is organized according to the habitat where plants are likely to occur. When meeting a plant for the first time, study the soil and moisture conditions, the light conditions, and the surrounding vegetation. Is the plant growing in gravel, or in shallow water? Is the plant in a sunny forest opening or in shady woods? Is it surrounded by spruce trees, beach vegetation, or bog plants?

Keep in mind that transition zones occur (such as where a meadow blends into forest), and may require checking both habitat sections in the book to locate the plant. Also, take note of the details of the habitat. Are you in an open forest and by a stream? Creeks are typically associated with plants such as monkey flowers.

Are you in the wilderness or in your backyard garden? Shepherd's purse is one example of a plant common near human settlements and virtually nonexistent in wild areas.

Once you identify a plant in a habitat division, such as marsh marigold, begin looking for buckbean, sweet gale, cranberry, sundew, and poison hemlock, which are all likely to be nearby. Pay special attention to the skull and crossbones that accompany drawings for poisonous plants. These are the major toxic plants of the region.

Of course, not all plants are limited to one particular habitat. Many have species that cross boundaries, adapting to quite variable conditions. In this book, such a plant is included in the habitat in which it most frequently occurs.

Note to the third printing: Botanists have recently altered family names to conform to a standardized ending; that is, all family names end in *aceae*. The new current names are as follows:

Composite Family—Asteraceae, formerly Compositae (pages 131, 161, 194, 244, 294, 303, 318)

Mustard Family—Brassicaceae, formerly Cruciferae (pages 283, 311, 314)

Parsley Family—Apiaceae, formerly Umbelliferae (pages 46, 128, 142, 277)

Pea Family—Fabaceae, formerly Leguminosae (page 273)

PREFACE, 1
ACKNOWLEDGMENTS, 2
INTRODUCTION, 3

MARSHES, PONDS, AND WET PLACES, 4

American Veronica, 6
Buckbean, 8
Cattail, 10
Cotton Grass, Bulrush, and Sedge, 13
Cranberry, 16
Crowberry, 18
Labrador Tea, 20
Lingonberry, 23
Mare's Tail, 26
Marsh Fivefinger, Shrubby Cinquefoil, and Silverweed, 28
Marsh Marigold, 31
Sphagnum Moss, 34
Sundew, 36
Swamp Cabbage, 38
Sweet Gale, 40
Valerian, 43
Water Hemlock, Poison Hemlock, 46
Wild Calla, 48
Wild Iris, 50
Yellow Pond Lily, 53

FORESTS AND OPEN WOODS, 56

Trees and Shrubs without Berrylike Fruits, 58

Alder, 58
Birch, 61
Hemlock, 65
Poplar and Aspen, 67
Spruce, 71
Willow, 74

Woodland Plants and Shrubs with Berrylike Fruits, 77

Baneberry, 77
Blueberry and Huckleberry, 79
Bunchberry and American Dogwood, 82

Currant, 85
Devil's Club, 87
Highbush Cranberry, 90
Mountain Ash, 93
Salmonberry and Thimbleberry, 96
Trailing Raspberry, Cloudberry, and Nagoonberry, 99
Twisted Stalk, 102

Woodland Plants without Berrylike Fruits, 104

Broomrape, 104
Chiming Bells and Oysterleaf, 106
Club Moss, 108
Ferns: Lady Fern, Ostrich Fern, and Shield Fern, 111
Fungi: Puffballs, Sulphur Shelf, Bear's Head, and Hedgehog, 115
Pyrola and Single Delight, 120
Violet, 123

WILD GRASSY MEADOWS AND SUNNY FOREST OPENINGS, 126

Angelica, 128
Arnica, 131
Bedstraw, 133
Burnet, 136
Chocolate Lily, 138
Columbine, 140
Cow Parsnip, 142
Elder, 145
False Hellebore, 149
Field Mint, 152
Fireweed and River Beauty, 155
Geranium, 158
Goldenrod, 161
Lupine, 164
Monkshood and Delphinium, 167
Nettle, 170
Raspberry, 174
Rose, 177
Strawberry, 181
Wild Chive, Wild Onion, and Death Camass, 184
Yellow Rattle and Eyebright, 188

STREAM BANKS, CREEK SHORES, MOIST BLUFFS, AND WET ROCKY PLACES, 190

Alum Root, 192
Coltsfoot, 194
Jewelweed, 198
Monkey Flower, 201
Saxifrage, 203
Spring Beauty, 206

GRAVEL BARS, DRY SLOPES, TUNDRA, AND DRY ROCKY PLACES, 208

Indian Potato and Bear Root, 210
Juniper, 213
Kinnikinnick and Bearberry, 217
Lichens: Reindeer and Iceland Moss, 220
Pink Plumes, Alpine Bistort, and Alaskan Rhubarb, 224
Roseroot and Stonecrop, 227
Serviceberry, 230
Silverberry, 233
Soapberry and Buffaloberry, 235
Sorrel, Mountain Sorrel, and Dock, 237
Woolly Lousewort, 242
Wormwood, 244

SEA AND SANDY SHORES, 248

Algae:
  Acid Kelp, 250
  Bladderwrack, 253
  Bull Kelp, 255
  Dulse, 258
  Nori, 261
  Ribbon Kelp, 264
  Sea Lettuce, 266
Arrow Grass, 268
Beach Greens, 271
Beach Pea, 273
Glasswort, 275
Lovage, 277
Orach and Sea Blite, 280
Spoonwort, Sea Rocket, and Bitter Cress, 283

GARDENS, LAWNS, CULTIVATED AND DISTURBED SOILS, 286

Chickweed, 288
Clover and Sweet Clover, 291
Dandelion, 294
Field Horsetail, 297
Lamb's Quarter and Strawberry Spinach, 300
Pineapple Weed and Arctic Chamomile, 303
Plantain and Goosetongue, 306
Shepherd's Purse, 311
Wild Mustards: Wild Mustard, Wintercress, Rockcress, Peppergrass, and Pennycress, 314
Yarrow, 318

ADDITIONAL INFORMATION, 322

Harvesting and Drying Herbs, 322
Homeopathy, 325
Flower Essences, 327
Treatment of Acute Poisoning, 329
Herb Directory: Societies, Suppliers, Schools, 330
Glossary, 331
Bibliography, 337

INDEX, 341

Preface

Drinking herb teas, seasoning foods with herbs, eating wild spring greens, making berry jams and drinks, treating everyday ailments with herbal compresses, oils, and tinctures — all are activities my grandparents performed. They saw a doctor only in the case of a serious illness. Today, the escalating costs of medical care again make trips to the hospital less commonplace. Beyond the financial reasons for this, more and more people are eating and exercising properly, relaxing in positive ways, and taking responsibility for their health. I believe credit is also due the current herbal renaissance.

Though technically an herb is "a flowering plant with stems that wither at the end of the growing season," I prefer the holistic definition of "any plant with a beneficial use." It has been said that eating plants in your local area is the best way to become acclimated to climate and resistant to illness.

I find that walking in woods, fields, and bogs, gathering by season spring greens, summer flowers and fruits, and autumn seeds and roots, followed by making and sharing herbal products link me to the earth in a cyclic, satisfying way. As I meditate by a grandfather tree, photograph a flower, or massage someone's back with wild-crafted herbal oil, I feel relieved of stress and closer to the seasons and nature. This is the magic of herbs. I think of the plants less as "medicine" and more as essences of the earth that we take into ourselves, which help us become healthier in the process.

Harvesting herbs for these various purposes is a special way of sharing with the earth. Proper harvest techniques (see Harvesting and Drying Herbs at back of book) assist the plant community from which herbs are gathered in producing more vigorously. As roots are selectively harvested, for example, soil is loosened, thus aerating the ground for the remaining roots, as well as for seeds that will germinate.

Many people find the act of foraging becomes even more peaceful and pleasurable when joined to harvest rituals. Native gatherers traditionally leave gifts (ranging from a pinch of tobacco to seeds) in holes from which they collect roots. My favorite ritual is to meditate near the eldest plant in a community and silently ask "permission" to gather its offspring.

Such quiet gestures increase our attunement to plants. Herbs in the wild lack name labels. In order to observe the details that distinguish each plant, we have to slow down. It takes time to see the arrangement and shape of leaves and flowers, to smell a fragrance, and to feel the plant and note how its texture resembles silk, sandpaper, or some other material. If we know the plant is edible, taste helps us identify it. Though some plants remind us of cucumber or spinach or some other garden food, wildlings should be appreciated for their unique flavors. Many are suited to gourmet dishes; others are less savory, but can sustain life in a survival situation. (Taste can also indicate the healing properties of a plant. Bitter herbs, for example, stimulate gastric secretions, and are often used as stomach medicines.)

When you enter a new field or forest of plants, serendipitous discoveries await you. Instead of feeling in a strange jungle, you sense you are among friends. You see what's growing in the tangle of alders through which you're weaving your way. Your mouth waters when you spot a prime twisted stalk shoot or a tangy sorrel leaf. You feel joy when you encounter a prime patch of devil's club (that you still carefully skirt until harvest season).

The learning never ends. Whatever your interest in plants, I invite you to explore the rich world of the Northwest's flora. May this book aid you in your own herbal adventures.

Acknowledgments

I offer my very warmest thanks to each and every person who contributed to this project. This book is a byproduct of networking with countless individuals who generously contributed recipes, cultural traditions, plant lore, and botanical information. I am also thankful to patient librarians who tracked down Pacific Northwest floras, herbals, and references and to the authors of such works for their well-documented materials. Without this supportive network, this book could never have been written.

Key references used during the research of this book include: *Dena'ina K'et'una, Tanaina Plantlore* by Priscilla Russell Kari (source for all Dena'ina plant lore); *Nauriat Nigiñaqtuat, Plants That We Eat* by Anore Jones (Inupiat plant lore); *Kuuvanmiit Subsistence* (Kobuk River Eskimo lore); *Flora of Alaska and Neighboring Territories* by Eric Hultén (range information); *Flora of the Pacific Northwest* by C. Leo Hitchcock and Arthur Cronquist (range information); *A California Flora and Supplement* by Philip A. Munz (range information); *Hortus Third* (horticultural information); and *Nature's Colors: Dyes from Plants* by Ida Grae.

Without the thorough groundwork laid by botanical and herbal authors throughout history, this work would not have been possible. I offer my deepest gratitude to all.

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Introduction

The beliefs that we are connected to the Earth, that nature is an ally, that it is our responsibility to be stewards of the planet, are strong winds blowing around the globe. Such partnership with the herbal kingdom is not a new concept. Herbal medicine is still the predominant therapy in most of the world. However, in industrialized societies we tend to view "medicine" as a pill, disconnected from herbal roots. This is not to say that all folk herbal uses are effective, nor to say that the merits of modern medicine are to be discounted. There is a balance between these two approaches, just as there is a balance between using and stewarding earth resources.

This book, I hope, reflects that balance. It comes of six years of research, and field trials on self, family, and friends. It also speaks to my discovery and delight as I learned the many wild plants and gleaned the herbal knowledge of my own ancestors. In response to my childhood ailments, my parents had always turned to doctors for advice, and to pharmacies for prescribed drugs. Yet two summers ago, as I took my father on a guided herbal tour, the sight of plantain evoked a memory for him: "My mother used that! When my brother had a gunshot wound, she used plantain leaves to treat it because we didn't have money for a doctor. The wound healed perfectly."

This book is written for those who have lost touch with their herbal roots, as well as those who wish to expand their knowledge of Northwest plants. Herbal remedies within range from the ludicrous historical prescription for blending strawberry juice with the "dung of a white dog" as a treatment for throat ulcers, to effective, practical directions for using plantain poultices for camping injuries. Scientific herbal data, such as the documented antitumor activity of the alder, *Alnus rubra,* are also included. Whether your desire is simply to identify more of the flora in the region, to learn entertaining herbal lore, or to learn how to use and steward plant resources, I trust this guide will help you investigate the rich world of wild plants.

Marshes, Ponds, and Wet Places

We need the tonic of wildness — to wade sometimes in marshes . . . and hear the booming of the snipe; to smell the whispering sedge where only some wilder and more solitary fowl builds her nest, and the mink crawls with its belly close to the ground.

——HENRY DAVID THOREAU

The popularity of wetlands, in the human mind, has been nearly as changeable as fashions. "Till them. Fill them. Leave them alone."

Some of the richest agricultural grounds are reclaimed sphagnum bogs. In recent years, developers have sought to fill such "worthless wetlands" to make way for the progress of shopping malls and industry. Those attuned to these key ecosystems value them for their nesting birds, rare flora, and resident wildlife. A two-square-mile section of Alaska's Stepstone Bog, for example, provides winter range for over one hundred moose.

Bogs and pond edges are inescapably wet and buggy. Unless one dresses in mosquito nets and rubber boots or waders, a summer jaunt can be less than comfortable. The serendipity of a day in a bog, however, can far outweigh the discomforts. For those willing to embark to such challenging habitats, discovery awaits. While photographing buckbeans in a nearby bog, for example, I watched a coyote and listened to the symphony of sandhill cranes and yellowlegs. Wetlands team with life — from insects and frogs to the furred and feathered.

Cattail is an aquatic common in many Pacific Northwest marshes. Mature female flowers make an attractive home decoration.

Veronica thrives in moist places along streams and watersheds.

AMERICAN VERONICA *(Veronica americana)*

OTHER NAMES: speedwell, American brooklime

Figwort Family (Scrophulariaceae)

Habitat and Range

American veronica flourishes along streams and in wet ditches from east-central Alaska and the central Yukon to California.

There are a number of other *Veronica* species scattered throughout the Pacific Northwest. *V. americana* is the species most noted for food and medicine, but all are likely to be safe for consumption.

American Veronica: Salad Green and Scalp Conditioner

The dainty veronica is more than just a bank-brightening wildflower. It provides a vegetable (said to be superior to watercress), a bush medicine, and a kitchen cosmetic. It is also a wonderful addition to the home herb garden if you can provide the moist conditions it loves.

Harvest Calendar

Spring to early summer: veronica leaves and stems. (The plant is best before flowering. Use fresh for food; dry or tincture for medicinal use.)

Food Use

The upper stems and leaves of veronica can be nibbled as a snack, added to salads, or

Physical Description

AMERICAN VERONICA: *Veronica americana; a.* Grows from 6 inches to 3 feet high at maturity, depending on soil conditions; *b.* Flowers are small, blue to purple in color, with 2 stamens and 4 unequal petals; *c.* Flower stems occur at junction of leaf and stem. Lower trailing stem joints root readily; *d.* Seed purses are heart-shaped and relatively large; *e.* Leaves are gently toothed and arranged in pairs.

steamed lightly as a potherb. The leaves are considered spicy and refreshing by some, bitter by others. As always, taste buds react differently to flavors so you'll just have to decide for yourself. In Japan and parts of Europe, the greens are considered a delicacy.

The leaves and stems (add flowers if you wish) can be steeped for tea. Overseas, it's very popular and nicknamed *tea de l'europe;* the taste is reminiscent of Chinese green tea.

Those who find the vitamin C-crammed veronica too strong flavored might try cooking the plant in changes of water or using it in casseroles blended with milder greens.

Medicinal Use

Though *V. officinalis* is the "official" European species for medicinal use, *V. americana* has similar properties. The flowering herb is used, and administered as tea, tincture, or juice.

Veronica is mainly used as an expectorant for respiratory problems, such as bronchitis and asthma. Veronica is often combined with coltsfoot for lung problems; with dandelion root for liver complaints; with nettle and shepherd's purse for stomach ulcers; and with elder for eczema and acne. Veronica is traditional in cough syrups, sore throat gargles, and skin salves.

Cosmetic Use

Veronica infusions can be used in hair conditioning rinses and skin-clearing herbal steams. Veronica is also an ingredient in massage oils and ointments. Add it to your bath water for a soothing soak.

Historical Use

According to legend, the genus is named after Saint Veronica, who wiped Christ's face as He was on route to be crucified. She was left with Christ's "true image" *(vera iconica)* on her handkerchief.

Another tale has it that medical use of veronica began after a shepherd observed an injured deer heal its wounds by eating and rolling in the herb. The shepherd reported his findings to the kingdom's sick king, who tried the plant, speedily became well, and showered the shepherd with riches.

The dainty blue blossoms are sometimes called "forget-me-nots," but they are entirely different from the state flower of Alaska, *Myosotis.* The forget-me-not that is Alaska's floral emblem is a member of the borage family; veronica is a figwort.

Blue flowers, whether they are forget-me-nots, veronica, or something else, are a traditional gift of good luck and remembrance for departing guests. The greeting "God speed" or "speedwell" that accompanied the present basically means "God be with you." Speedwell is one of the nicknames for veronica.

Caution

When picking any water-loving greens like veronica, cattails, mare's tail, or buckbean, always be certain to avoid polluted areas. If you have any doubts concerning the purity of the habitat, you can add a halozone tablet or bit of chlorine bleach to the wash water.

Veronica Casserole

3 cups cooked rice
1 cup reindeer sausage, cooked deboned fish, tofu, or tempeh
3 tablespoons soy sauce
1/2 cup chopped veronica leaves and stems
1/2 cup chopped chickweed
1/2 cup nettle leaves
1/2 cup grated Mozzarella cheese

In casserole dish, combine rice, sausage (or desired substitute), soy sauce, and greens. Top with grated cheese. Cover. Bake at 350°F for 30 minutes. Serves 3.

Buckbean grows at the edge of shallow ponds and in bogs and wet meadows. Note the distinctive arrangement of 3 leaves per stem.

Physical Description

BUCKBEAN: *Menyanthes trifoliata; a.* Grows to about 1 1/2 feet high; *b.* Flowers have 5 white (sometimes pinkish) petals with "fuzzy beards"; *c.* Fruit is a beanlike capsule; *d.* Leaves are smooth (glabrous); 3 leaves per stem; *e.* Flowers are on a long leafless stalk (peduncle) that is taller than the leaves; *f.* Leaves are on long stalks (petioles); *g.* Leaf base is enclosed by a sheath; *h.* Rootstock (rhizome) is dark-colored.

BUCKBEAN *(Menyanthes trifoliata)*

OTHER NAMES: bogbean, marsh clover, marsh trefoil, water shamrock, bog hop, bitterworm, moonflower, bean trefoil

Gentian Family (Gentianaceae)

Habitat and Range

M. trifoliata is the only *Menyanthes* species in the Pacific Northwest. It grows in marshy areas and shallow ponds from northern Alaska and the Yukon to California.

Buckbean: Herbal bitter and British Tobacco

Despite being rated "the most beautiful flower of Britain," buckbean is often unrecognized by northwestern foragers. This paradox is likely due to the fact that buckbean favors habitats most humans avoid, such as places wet and buggy.

Another paradox is that some enthusiasts who have discovered the beauty of buckbean have unwittingly overpicked the plant, relegating it to endangered species status in some states. In less populated areas, buckbean continues to flourish (along with its attending armies of mosquitoes). Wise harvesting techniques, combined with wetlands protection, will assure the continuation of this stunning wildflower.

Harvest Calendar

Summer: leaves. (Contrary to most plants, buckbean leaves are said to be best for medicinal purposes when the plant is IN flower.)

Fall to spring: rootstocks. (Harvest only from large buckbean patches. Harvest selectively, gathering no more than one out of ten roots.)

Food Use

Buckbean rootstocks are extremely bitter, and rated "survival fare" only. In an emergency, you might try them as a food source, but make certain to cook the rhizomes in at least two changes of water first. Adding baking soda to the water improves the flavor, as does leaching the cooked root in a stream overnight.

Medicinal Use

Dried buckbean leaves are a good item for the bush medicine chest. (NOTE: fresh leaves are emetic, therefore dry well before use unless you INTEND to induce vomiting. See Caution, following.) Pour one cup boiling water over a heaping tablespoon of dry leaves and let steep for ten to fifteen minutes. The strained brew, which is high in iron, iodine, and vitamin C, can be sipped over the course of the day as a tonic for strengthening and toning the organs. Drink the tea to prevent or recover from scurvy, a disease characterized by bleeding gums and general exhaustion. For a general pick-me-up, blend buckbean leaves with nettle and mint leaves, and dandelion and devil's club roots.

Buckbean's bitter glucoside, menyanthine, stimulates the gastric juices. *The Herb Book* recommends sipping one-half cup buckbean tea thirty minutes before meals to stimulate appetite and promote digestion.

Since buckbean infusions are diuretic, they are helpful for excess water retention. Leaves also have laxative properties and help bowel evacuation. The Aleuts, reports Smith in "Arctic Pharmacognosia," use buckbean rootstocks as a tonic for relief of ". . . gas pains, constipation and rheumatism." In *The Complete Book of Health Plants,* Bianchini and Corbetta write that "modern herbalists prescribe buckbean for rheumatic complaints, skin diseases, and for reducing fevers."

Externally, poultices of buckbean leaves can be applied for festering skin sores, herpes, and for reducing glandular swellings. I like adding buckbean leaves to sore muscle liniments, massage oils, and skin salves.

Cosmetic Use

Buckbean leaves are said to be an effective facial steam for those troubled by acne. Add buckbean tea to your bath water, or use as a rinse for oily hair.

Other

Buckbean is listed as a hops substitute in Samuel Henry's herbal published in 1814. One ounce of dry buckbean leaves is said to equal eight ounces of hops.

A stunning wildfower, buckbean has often been transplanted to suitable home gardens. It must be planted in peat with water kept around the rootstocks at all times. It's especially suited for the marshy edge of a home pond. The creeping rhizomes should be separated in fall or early spring.

The botanical name, *Menyanthes,* is Greek for "month flower." Some experts say this refers to the duration of flowering; others insist the nickname originates from buckbean's use as a tea for relief of menstrual pain. The species name *trifoliata* refers to its three leaves per stem.

Curiously, I've found no use for the bean-like fruits of buckbean. The herb's common name, says the ancient herbalist Gerard, refers to the resemblance of the leaves to those of beans in cottage gardens.

Buckbean leaves are a common ingredient in herbal smoking blends. They are said to be a good stretcher, or substitute, for tobacco.

Caution

Fresh leaves can provoke vomiting; dry leaves thoroughly before use. Even dry leaves, if taken in large doses, can have an emetic effect. Buckbean use is contraindicated for those with diarrhea.

Herbsmoke, A Nicotine-Free Smoking Blend

2 parts buckbean leaves
2 parts coltsfoot leaves (traditionally smoked for relief of bronchial congestion)
1 part pineapple weed
1 part yarrow
1 part mint (optional)
1 part lobelia (Optional. Lobelia is available in herb shops and natural foods stores; it's traditionally smoked to decrease craving for nicotine.)

Dry herbs well. Blend all ingredients. This mixture can be smoked in a pipe, or rolled.

Cattail's upper male flower produces pollen; the lower female flower substitutes for corn on the cob when young and green.

CATTAIL (*Typha* species)

OTHER NAMES: cat-o'-nine-tails, Cossack asparagus, rushes, flags (*Typha* species); broadleaf cattail (*T. latifolia*); tule cattail (*T. domingensis*)

Cattail Family (Typhaceae)

Habitat and Range

Cattails flourish near shallow lakes, marshes, and the edges of ponds.

T. latifolia occurs in south-central Alaska (around Anchorage) and throughout central Alaska and the Yukon. It is common from British Columbia to California.

T. domingensis ranges from Oregon to California.

T angustifolia and *T. glauca* are other California species. Use of all species is similar.

Cattails: The One-Stop Shopping Center

The cattail has often been called the "supermarket of the swamp," and indeed it is. My one cattail complaint is that this aquatic, which has more uses than a cat has lives, is of such limited distribution in Alaska. My favorite patch is a 225-mile drive north.

Harvest Calendar

Winter: starch-filled rootstalks. Look for the brown remnants of leaves and stalks to guide you to the nourishing rhizomes. These are a source of white flour. Hornlike growths on these underground stems are a vegetable.

Spring: rootstalk sprouts and white core of young stalks.

Late spring to early summer: green female flowers, pollen of upper male flowers, and cattail "heart" (starchy ball formed at junction of green stem and white rootstalk).

Autumn: rootstalks and rootstalk sprouts.

Food Use

The tender inner core of the spring stems (called Cossack asparagus) is eaten raw or cooked. Slice the peeled white core and add to green salads and potato salads. Try it pickled, steamed, or stir-fried.

Campers who miss farm-fresh ears of

golden corn are apt to rave about cattail's version. Pick the green immature flower spikes and prepare in the manner described in the accompanying recipe.

The male flowers produce abundant yellow pollen. Collect by placing a paper bag over the flower head and shaking enthusiastically. Sift the pollen and add to pancakes, muffins, and biscuits (in place of up to half the flour) for a golden color and special flavor. The pollen may be used immediately or dried; it has a storage life of about one year.

To obtain white flour from the rhizomes, scrub them well and peel away the tough outer rind while still wet. Then pound with a mallet. Place the macerated rootstalk in a jar and cover with water. The flour (30 percent to 46 percent starch and the same protein content as rice) will settle to the bottom. Carefully pour off the water and discard any stringy fibers. Use the wet, white flour immediately in baking, or dry well and store.

The sprouts on the rhizome are added to salads as well as Chinese stir-fries. The choice starch ball at the base of the stem also adds texture and flavor to dishes. For a special treat, slice it and prepare like pan-fried potatoes.

Medicinal Use

Mature female cattail flowers are traditionally mashed and formulated into a salve for cuts and burns. The Chinese value cattail pollen for its astringent and styptic properties; they use it in the treatment of dysentery.

In *Tom Brown's Field Guide to Wilderness Survival*, Brown reports rubbing the sticky juice found between cattail leaves on his gums at the dentist's as a novocaine substitute. He also recommends the practice for pain relief from toothache.

Historical Use

American Indian tribes utilized cattail pollen in cakes and mush as well as in ceremonial rites for adolescent girls. Leaves supplied materials for baskets, summer houses, and bedding. Ashes from the burned spikes were sprinkled on infants' navels to stop bleeding. Soaked in oil, the spikes were torches. The dried ground rhizomes provided meal. Cattail down,

Physical Description

CATTAIL: *Typha* species; *a.* To 9 feet; *b.* Upper male flowers turn golden when with pollen, fall off after shedding pollen; *c.* Green sausagelike female flower spikes change to brown velvet at maturity; *d.* Long, swordlike leaves; *e.* Stiff, unbranched stems; *f.* One to $1^1/_2$ feet of stem with tender white core; *g.* Starchy ball located where stem meets rootstock; *h.* Shallowly buried starchy rootstock (rhizome); *i.* Curved white rootstock sprouts found in late summer to early spring; *j.* True roots.

Cattail Corn on the Cob

Green immature flower spikes
Boiling water
1/4 cup butter
1 clove garlic, minced

Place flower spikes in boiling water. Cook 5 minutes or until tender. Heat butter and garlic in small saucepan. Dip flower spikes in butter. Eat like corn on the cob, discarding the central core. (The immature female and male flowers are both delicious.) Serves 2 to 4.

from the mature female flower heads, yielded insulation, dressings for wounds, bedding for cradle boards, and diaper material.

During World War I, the down was in great demand for use as filling in life preservers, and as insulation for quilts. In 1544, reports the *Commentaries on the Six Books of Dioscorides*, "poor people used this down to make soft their bed-pillows." Today, cattail down is still prized as filling for children's toys and as stuffing for herbal dream pillows.

The leaves have a long history of use as caning material for chairs; cattail-caned chairs have been known to survive a century of use. To gather caning supplies, collect the mature leaves and hang in bundles in a warm, airy place until dry. To use, soak in water until soft and pliable.

Leaves have also served as caulking material in pioneer cabins. The stalks have yielded arrows and hand-drills. The down, blended with tallow, was once used as chewing gum.

Other

The brown flower spikes make a delightful accent in autumn dried flower arrangements. Be certain to coat the dried spikes with hair spray or varnish so they don't explode their downy seeds in your home.

On a camping trip, you can soak the flower heads in kerosene or diesel fuel and light as torches; they will burn for about thirty minutes. The down provides tinder for starting fires. To ward off frostbite, stuff this insulating material into your gloves and socks. Fill a small cloth sack with cattail down for a wilderness pillow. If you forget your toothbrush, try using the fuzzy stem with the flowers removed.

For muskrats and geese, the cattail rhizomes are a food source; moose enjoy browsing young shoots. The thick leaves provide cover for many nesting birds.

The genus name, *Typha*, is Greek for "cattail," *latifolia* means "broad-leaved." *Hortus Third* reports "cattails are sometimes used in bog gardens and on the margins of pools, but can be weedy unless restrained. Propagated usually by division, sometimes by seeds planted in pots of water."

Unlike the pond lily, whose rhizomes are difficult to collect, cattail relinquishes its rootstocks without a struggle. Armed with knee-high rubber boots and weak muscles, you can easily obtain a supper's worth of cattails.

Cattails, however, offer the world a source of food for many, many suppers. In *Edible Native Plants of the Rocky Mountains*, Harrington reports that one acre of cattails yields over three tons of nutritious flour. Though extraction techniques need to be refined for a commercial enterprise, the plant offers hope to a hungry planet. Reproducing rapidly in marshy areas unsuited for most agricultural pursuits, cattails could well be one of the wonder foods of the twenty-first century.

The plant grows so prolifically, in fact, that it often chokes itself to death. So do yourself and your favorite patch a favor — thin it of a few of its members and enjoy a memorable meal or garden pond addition.

Caution

Though cattail is considered safe, foragers should be aware that wild calla *(Calla palustris)* and wild iris *(Iris setosa)* frequently inhabit the same vicinity. Wild calla has heart-shaped leaves totally unlike cattails, but its underwater rhizomes look quite similar. Wild iris has a flower that looks much like garden iris, but its long, linear leaves are reminiscent of cattail. Mistaken identity is virtually impossible in summer; confusion (and possible poisoning) could result if harvesting just the rhizome in fall or winter.

COTTON GRASS (*Eriophorum* species)
BULRUSH (*Scirpus* species)
SEDGE (*Carex* species)

OTHER NAMES: mousenuts, Alaska cotton, swamp cotton (*Eriophorum* species); great bulrush, tule (*Scirpus* species); water sedge (*Carex* species)

Sedge Family (Cyperaceae)

Habitat and Range

Cotton grasses favor wet bogs, roadsides, and tundra. There are over one dozen *Eriophorum* species and subspecies distributed throughout Alaska alone. Distribution decreases markedly in the southern range of the Pacific Northwest. Only one species, *E. gracile*, reaches from Alaska to California.

Scirpus species are common in marshes and ponds. *S. validus* is a bulrush that ranges from central Alaska and the Yukon to California. *S. microcarpus* grows from southeast Alaska to California. Numerous bulrush species grow in our region. All have similar use.

Carex species in the Pacific Northwest number in the hundreds. Habitat varies with species, from dry alpine slopes to bogs, meadows, and seashores.

Cotton grass, Bulrush, and Sedge: Food for Men and Mice

I first heard about "mousenuts" from Marsha Million, who vividly related her food-gathering experiences in an Eskimo village on the Bering Sea. She and the children would embark to the wet tundra in their moccasins, carefully feeling for "lumps" that indicated where mice had cached their hoard of the underground stems of cotton grass. These were raided and replaced with other abundant foods so the mice wouldn't undergo hardships while the humans relished the rodent-gathered rootstalks. Marsha Million says the mice occasionally located the human food cache and enjoyed sweet revenge.

Harvest Calendar

Spring to early summer: stem bases of cotton grass, sedge, and bulrush.

Cottonlike flowers make the *Eriophorum* genus easy to recognize.

Mature bulrush often reaches nine feet in height.

Carex species are widely distributed in the Pacific Northwest.

Physical Description

COTTON GRASS: *Eriophorum* species; *a.* Flowers fluffy, white, cream or rusty color. Some species have multiple heads; *b.* Stems (culms) generally round but in some species are triangular. Culm may be stout or slender, tall or short, smooth or scabrous, depending on species. Height ranges from 1 to 2 feet; *c.* Leaf blades may be flat, triangular, channeled, or threadlike. Plant may grow in tufts or from runners.

BULRUSH: *Scirpus* species; *d.* Brownish, bristly flower spikes. Spikes may be solitary (*S. subterminalis*) or many and arranged in compound clusters called panicles (*S. microcarpus*). They grow on stems to 9 feet high; *e.* Stem (culm) may be round (*S. validus*) or sharply triangular (*S. americanus*). Culms of *S. microcarpus* are very leafy; *f.* Rootstock is stout.

SEDGE: *Carex* species; *g.* Flower spikes may be single or many, sessile or on stalks (peduncles) to 3 feet high. Male and female spikes may be on the same or different plants; *h.* Stems (culms) may be triangular or round. Leaves may be threadlike or flat and grasslike. Roots may have runners.

Summer: bulrush pollen.

Late summer: bulrush and sedge seeds.

Fall and spring: underground stems (rhizomes) of cotton grass, bulrush, and sedge.

Food Use

Due to its widespread distribution and versatile use, the sedge family offers a good source of nourishment for people who are lost or stranded. The pinkish bases of cotton grass, sedge, and bulrush can all be nibbled raw, or added to soups, casseroles, and stir-fries. Sedge Stir-Fry is ideally suited for a meal-in-the-field, as it adapts easily to available foods.

Bulrush stems, like those of cattails, have an edible inner core. Bulrush pollen can be added to pancake batters and bread doughs. Seeds are nutty in flavor and good additions to casseroles and snacks.

Bulrush rootstocks are eaten raw, boiled, baked, or roasted. Western Indians used to simmer them in water for twelve hours or so, and relished the sweet syrup that collected in the cooking pot. They also pounded dry rootstocks into flour.

To prepare "mousenuts" (cotton grass underground stems) for consumption, cover them with boiling water, then scrub away the blackish covering. Use raw or cooked. In *Nauriat Nigiñaqtuat*, Anore Jones says, "when you break one in two it snaps apart and looks white like coconut." The Inupiat preserve these for winter in seal oil.

Carex species with sweet, enlarged, underground stems are also collected by mice and "borrowed" by humans for winter food. All species are said to have edible stem bases and seeds. Jean King of Anchorage, Alaska, tops beach peas with peanut butter and sedge seeds as a snack.

Medicinal Use

Cotton grass rootstock decoctions have been used for treating colds and coughs, but medicinal use is not widespread today. Culpeper warned that excess ingestion could spark drowsiness and headache.

Bulrush was once prized for its astringent and diuretic properties. Rootstocks of various *Carex* species have been employed in the treat-

ment of stomach and intestinal disorders, cramps, constipation, and tuberculosis.

Historical Use

The woolly down of cotton grass flowers was once spun as fiber, but it proved to be far inferior to true cotton. Country people also used it as candlewicks.

Bulrush leaves were imported by Europeans for caning chairs. Leaves are still used for making duck blinds and emergency shelters.

Egyptian papyrus was made from the sedge *Carex papyrus*; this was used as paper in Europe until parchment production began. Mrs. Grieve, in *A Modern Herbal*, says sedges have been used "... for food and fuel, sails and cordage, baskets and sieves. . . ."

Other

Eriophorum translates as "wool" (erion) "bearing" (phoros); the woolly cotton grass flowers are an attractive addition to dried flower arrangements. They should be picked before the flowers are fully mature.

Despite their common names, cotton grass and bulrush belong to neither the grass family (Gramineae) nor the rush family (Juncaceae). They, together with sedges of the *Carex* genus, are all members of the sedge family (Cyperaceae).

Bulrush makes a good nesting cover for birds. Marshes are an excellent site for becoming acquainted with both bulrush and many bird species.

Some sedges have been planted in coastal areas to check erosion of sand dunes. There are about 2,000 *Carex* species worldwide. *Hortus Third* says some are planted "as edgings in greenhouses or as pot plants. Many of the species with pendant spikes make attractive clumps in the wild garden and pond borders."

Caution

Sedge family members should not be used medicinally without medical supervision. Properties and effectiveness are variable with species.

Sedge Stir-Fry

1 trout or small salmon
2 cups chopped stem bases of cotton grass, bulrush, or sedge
1 cup chopped edible greens
2 tablespoons finely chopped wild mustard greens and flowers
2 tablespoons finely chopped sorrel leaves
2 tablespoons butter or oil
Salt or soy sauce
8 cups cooked rice or noodles

Fillet the trout or salmon and cut into chunks. Sauté vegetables and fish in oil or butter until fish is tender. Add salt or soy sauce to taste. Serve on rice or noodles. Recipe serves 6. Catch a larger fish and add more rice for additional servings.

Search carefully for the cranberry fruits, often hidden in the nearby moss.

Physical Description
CRANBERRY: *Oxycoccus* species; *a*. Plants are low and trail through moss. Though only 2 to 4 inches high, the stems may be amazingly long; *b*. Berries are plump, red, many-seeded; *c*. Leaves are dark green above and lighter below. Leaf edges are rolled under slightly; *d*. Flowers are small and pink; they look somewhat like 4-petaled shooting stars; *e*. Stems are fine and threadlike; often hidden in moss. Stems are smooth for *O. microcarpus*, pubescent for *O. palustris*.

CRANBERRY (*Oxycoccus* species)

OTHER NAMES: bog cranberry, true cranberry, swamp cranberry, moss cranberry

Heath Family (Ericaceae)

Habitat and Range

O. microcarpus (also known as *Vaccinium oxycoccus)* and *O. palustris* inhabits bogs from Alaska and the Yukon to Oregon.

***Oxycoccus*: Common Cranberry with Uncommonly Good Flavor**

"A rose by any other name would smell as sweet," and wild cranberry "by any name" would taste as tart. Cranberry is but another plant whose "proper name" is a matter of debate. Generally the botanical handle eliminates the nonsense and defines precisely which plant is being talked about, but in this case, even the scientific name is argued.

Hultén, whose *Flora of Alaska and Neighboring Territories* has been used as a standard throughout this book, classifies the plant as an *Oxycoccus*. Other experts insist it belongs to the *Vacciniums*, the genus that includes blueberries, huckleberries, and lingonberries.

Characteristic of the *Vacciniums*, though, are bell-like flowers and shrubby growth. The cranberry in question is a tiny thread-stemmed creeper with flowers reminiscent of shooting stars. It also has very sour berries; translated into Latin, "sour berries" becomes *Oxycoccus*. Call this plant what you will, just don't bypass its tangy bog delights.

Harvest Calendar

Autumn (after first frost): berries. (NOTE: The fruits persist on the stems throughout the winter and can be gathered even into spring. Sometimes the spring berries ferment, making birds that feast too heavily a bit tipsy.)

Food Use

Cranberries can be nibbled raw, but their flavor improves with cooking and sweetening. Use these high-pectin fruits to make jams and jellies, and that Thanksgiving favorite — cranberry relish.

Cranberries add superior flavor to nut breads and cakes. Berries can be juiced for a refreshing vitamin C-laden beverage. Dry the sweetened pulp for a special fruit leather.

The storage quality of cranberries is outstanding. Berries can be kept in good condition throughout the winter just by placing the firm unwashed fruits in covered containers or porous cloth sacks in a cool place. (Massachusetts Pilgrims used to ship them across the Atlantic in kegs as gifts for those in England.)

If you prefer, you can freeze your harvest. *Edible Wild Fruits and Nuts of Canada* suggests placing the berries loosely on trays in the freezer for one to two hours, and then storing them in plastic bags or containers. When needed, just rinse the fruits in cold water and use like fresh berries.

Berries can also be preserved by drying. They're light to pack for camping trips and can be easily soaked in water overnight to reconstitute for use in pancakes or sauce.

Medicinal Use

Yukon River residents recommend eating cranberries and drinking cranberry juice for colds and for bleeding gums. In *Kuuvanmiit Subsistence*, it is reported that Inupiat feed cranberries in seal oil to those with poor appetite or gall bladder problems.

Cranberry juice is used as a douche for cystitis, and as a drink for urinary tract infections. One to two teaspoons of concentrated cranberry pulp, diluted in a cup of water, can be sipped by asthmatics to help overcome an attack.

Cosmetic Use

The Handbook of Natural Beauty says cranberries contain acids that bleach the skin and remove a faded tan. Juice is rubbed on the skin at bedtime and rinsed off in the morning. Apply a moisturizer after each treatment.

Cranberry Relish

2 cups cranberries
1 orange
1 cup pineapple
1 cup cleaned rose hips
1/2 cup walnuts
1/2 cup honey
2 tablespoons lemon juice

In food grinder with medium blade, grind cranberries, orange, pineapple, rose hips, and walnuts. Add honey and lemon juice. Mix well. Let stand 24 hours to blend flavors. Serves 4 to 6.

Historical Use

"Craneberries" is the name early New Englanders gave to *Oxycoccus* fruits due to the resemblance of the blossoms and stems to the neck and face of a crane. Eventually the name shortened to "cranberries."

Various Indian tribes used cranberries as food, gathering them green and storing them in damp moss. Fruits were also used as a means of barter.

Other

Besides providing food for birds, bears, and humans, the cranberry is a good source of red dye. The plant is a very ancient one; argon dating has substantiated that this delicate bog plant has been in existence for several million years! It's likely to exist long after the current controversy over its "proper" name.

Close-up of crowberry showing needlelike leaves and dark seedy fruits.

Crowberries sometimes grow in dense patches

CROWBERRY (*Empetrum nigrum*)

OTHER NAMES: blackberry, mossberry, black crowberry

Crowberry Family (Empetraceae)

Habitat and Range

Crowberries thrive in bogs, heaths, tundra, high mountains.

Crowberry, *E. nigrum*, ranges from northern Alaska and the Yukon to California. Subspecies *nigrum* has male and female flowers on separate plants, whereas subspecies *hermaphroditum* has bisexual flowers.

Crowberry: Fruit Improves with Cooking

Though one of the most popular berries in the Arctic, crowberries are all too often overlooked by other northwesterners. Though uninteresting in taste when raw, cooked crowberries yield delightful desserts, cordials, juices, and jellies. They are well worth gathering!

Harvest Calendar

Late summer to early fall: mature crowberries. (NOTE: Crowberries are best after the first frosts as the cold sweetens the fruits. If gathering them beforehand, place them in a freezer; this has the same effect as frosty nights.)

Food Use

Since crowberries are better cooked than raw, berry-picking is easy — free of the danger of incessant nibbling, your supply of fruit grows steadily. Once you blend the fruits into kitchen creations, however, your crowberries are apt to disappear rapidly. There are endless ways to use these versatile fruits.

Stew crowberries with honey and lemon juice as topping for ice cream. Use them in cakes, muffins, fruit leathers, and syrups. Add pectin and process into savory jams and jellies. Ed Berg of Homer, Alaska, suggests blending crowberries with blueberries for pie-making; they are a good extender when blueberries are in short supply.

For a nutritious, delicious breakfast beverage, crowberry juice (or crowberry syrup diluted with water) is recommended. For an

evening nightcap, crowberry wine and beer are popular. Berry liqueur is easy to prepare, and delicious made with crowberries, blueberries, raspberries, or cranberries.

Tingaulik is a favorite dish of the Inupiat; it's a blend of trout or tomcod livers and crowberries. Around Kobuk River, crowberries are served with seal oil. In St. Marys, the Mike family favors them topped with milk and sugar.

For winter use, crowberries are traditionally mixed with seal oil and stored in a cool place. They also can be frozen, canned or dried. (Dry crowberries are an excellent addition to pemmican.) Since crowberries overwinter well, foragers can collect the fruits in spring, along with bog cranberries and lingonberries.

Medicinal Use

Infusions of crowberry twigs and stems have been administered for colds, kidney troubles, and tuberculosis. Dena'ina Athabascans drink the tea for diarrhea. Kobuk River Eskimos use crowberry juice in sore eyes to relieve snowblindness. Decoctions of the roots and bark have also been used for sore eyes and cataracts.

Other

The botanical name, *Empetrum*, is derived from the Greek *en* (upon) and *petros* (rock). *Nigrum* means black. This black-fruited plant is often found in rocky soil. At Katmai National Park on the Alaska Peninsula, plump crowberries are abundant just outside the ash-strewn valley floor. Since these fruits persist on the evergreen stems into the winter, they are an important survival food. (Birds, bears, and pikas also find crowberries an important food source.)

Crowberries make an attractive ground cover in the home rock garden. Plant in well-drained soil. They also do well in terrariums.

Physical Description

CROWBERRY: *Empetrum nigrum; a.* Crowberry generally grows about 6 inches high. The trailing stems, however, often extend 24 inches in length; *b.* Fruits are blue-black with several seeds; *c.* Evergreen leaves are narrow and needlelike; edges roll back and meet; *d.* Woody creeping stems; *e.* Flowers are tiny, inconspicuous. Plants are bisexual or unisexual depending on subspecies.

Berry Liqueur

Contributed by Nancy Matthews, Homer, Alaska

3 pounds berries
1 bottle (750 ml) Everclear or vodka
6 cups sugar
3 cups water

Day 1: Crush berries or grind in blender with a little water. Let stand 24 hours.

Day 2: Add Everclear to ground berries. Let stand 24 hours.

Day 3: Strain berry-Everclear mixture through cheesecloth. Set aside.

In cooking pan, combine sugar and water. Heat to boiling and cook 5 minutes. Cool sugar-water solution; add to strained berry mixture. Makes 3 quarts. Let age 6 weeks or more.

Some foragers say that gathering leaves while the herb is in flower yields the tastiest beverage.

Toxic bog rosemary grows in the same habitat as Labrador tea. Leaves are similar in shape; bog rosemary leaves are smooth underneath while those of Labrador tea are woolly. Bog rosemary has pale pink, bell-like flowers. (Norma W. Dudiak)

LABRADOR TEA (*Ledum* species)

OTHER NAMES: marsh tea, muskeg tea, Hudson's Bay tea, trapper's tea, moth herb (*Ledum* species); northern Labrador tea (*L. palustre* subspecies *decumbens*), common Labrador tea, Greenland tea (*L. palustre* subspecies *groenlandicum* also known as *L. groenlandicum*); glandular-leaved Labrador tea (*L. glandulosum*)

Heath Family (Ericaceae)

Habitat and Range

Habitats are variable, ranging from bogs to tundra.

L. palustre and its subspecies *decumbens* and *groenlandicum,* collectively range from northern Alaska and the Yukon to Oregon.

L. glandulosum and *L. columbianum* range from British Columbia to California.

Foragers should be aware that the poisonous bog rosemary, *Andromeda polifolia,* and bog laurel, *Kalmia polifolia,* also range in Labrador tea habitat. The former occurs from Alaska to Washington, and the latter from Alaska to California.

Labrador Tea: Spice and Moth-Repeller

Ledum species have countless common names, but nearly all refer to its use as a beverage. Hudson's Bay tea refers to its popularity with employees of the Canadian supply company. Marsh tea, muskeg tea, Labrador tea, and Greenland tea all suggest places where the tea herb grows. Since fur traders and trappers often drank *Ledum* as a substitute for expensive black tea, it was also dubbed trapper's tea. Moth herb refers to its common European use, as an herb for protecting woolens from destructive insects.

Harvest Calendar

Year-round: leaves. The "best" time to harvest is a matter of controversy among foragers. Some say the brownish winter leaves provide the tastiest brew. Others insist the green spring leaves are superior. Still others say the summer flowers make the best tea.

Food Use

A light, delicate beverage is made by pouring boiling water over Labrador tea leaves and/or flowers and steeping five to ten minutes. Though some people heat the tea on a wood stove for a few days to make a dark, spicy brew, this practice is NOT recommended; prolonged cooking periods extract large amounts of ledol and can cause toxic reactions. (See Caution, following.)

Most commonly, Labrador tea leaves are mixed with other herbs for tea blends. Grace Johnson of Nome, Alaska, says she adds Labrador leaves to black tea to increase its flavor. Labrador toddy makes a warming brew on blustery camping trips.

Use Labrador tea leaves as a bay leaf substitute when making stews. Ground *Ledum* is a tasty meat spice; add to marinades for a spicy flavor. Dena'ina Athabascans soak brown bear meat in Labrador tea to make it palatable.

Medicinal Use

The Dena'ina Athabascans sip Labrador tea for disorders ranging from heartburn and hangover to tuberculosis, colds, and arthritis. Externally, the tea is used as a wash for sores.

Yup'ik natives in Toksook Bay in western Alaska, says former resident, Marsha Million, boil the whole herb until a dark brew results. This decoction is given to individuals suffering from food poisoning. When troubled with digestive upset after a too-hearty Thanksgiving dinner, Million came to my rescue. She returned from a bog in dark of night armed with Labrador stems, roots, and autumn leaves. A few sips of the strong, dark decoction (made by boiling the plant for twenty minutes) effectively settled my stomach.

Labrador tea is slightly laxative; infusions are often recommended for "camper's distress," that is, constipation. "Because of its diaphoretic and diuretic properties," says *The Herb Book*, "an infusion or cold extract can be used for rheumatism, gout, and arthritis," while warning that "excessive doses can cause poisoning." (See Caution, following.)

Cosmetic Use

Labrador tea leaves are astringent, and

Physical Description

LABRADOR TEA: *Ledum palustre; a.* Grows 6 inches to 3 feet high; *b.* Lance-shaped leaves alternate on stem; *c.* Leaves are very aromatic when crushed; *d.* Leaf edges roll under. Underside of leaves are woolly, often reddish in color; *e.* Flowers are white with 5 petals and 5 to 7 stamens. They are in clusters at the top of the stem; *f.* Contains ledol. (See Caution, following.)

BOG ROSEMARY: *Andromeda polifolia; g.* Dwarf plant to 10 inches high; *h.* Flowers are pale, pink bells; *i.* Leaves are gray-green above, smooth and light-colored below; *j.* Contains andromedotoxin and should *NOT* be consumed. (See Caution, following.)

Labrador-Spruce Toddy

2 tablespoons Labrador tea leaves
Generous double-handful spruce tips
4 cups boiling water
4 tablespoons brandy or cognac

Place Labrador tea leaves and spruce tips in teapot. Add boiling water and steep 5 to 10 minutes. Strain. Pour into mugs. Add 1 tablespoon brandy or cognac per cup. Serves 4.

useful for facial steams and after-facial splashes. For a sore muscle liniment, soak the leaves and flowers in alcohol with devil's club root and nettle leaves.

The aromatic leaves are pleasant to use in saunas; place on hot rocks and splash with water to release their fragrance. Simmer the leaves in a pan of water on your wood stove for a pleasant "stovetop potpourri."

Historical Use

Labrador tea was a popular beverage during the American Revolution, when British teas were boycotted. It was also a favorite of traders, trappers, pioneers, and Civil War soldiers.

A Modern Herbal mentions that Germans add leaves of *Ledum palustre* to their beer to make it more intoxicating. Europeans typically placed aromatic *Ledum* leaves in grain boxes and corncribs to discourage mice and rats. (Try scattering the leaves in your garden if you are plagued by rodents devouring your crops.) The stalks were traditionally hung in closets to repel moths, as well as ghosts and illnesses.

Other

Labrador tea is a circumpolar herb that grows in profusion in northern muskegs, bogs, and spruce-birch forests. Labrador tea is sometimes cultivated as an ornamental; it does well in moist acidic soil in sun or partial shade.

Caution

Labrador tea contains ledol, a narcotic toxin that sparks drowsiness, delirium, cramps, paralysis, heart palpitations, and even death when taken in excess. Though I know of numerous foragers who drink Labrador tea on occasion without any unpleasant reactions, I do not recommend frequent use or high concentrations of the herb. Individuals with heart palpitations or high blood pressure should avoid internal usage of Labrador tea. Allergic reactions, such as rashes, can also result from internal use. Use in moderation only.

Bog rosemary, *Andromeda polifolia*, grows in the same habitat as Labrador tea. When flowering, the plants would be difficult to confuse as bog rosemary has pale pink, bell-like flowers and Labrador tea has clusters of white, five-petaled flowers. When foliage alone is present, however, the plants look quite similar. Before harvesting, examine the underside of the leaves. You'll discover that Labrador tea has a felty, rusty covering and strong aroma; bog rosemary has smooth undersides that are light in color and have a nondescript smell. Bog rosemary contains andromedotoxin, a toxin causing low blood pressure, diarrhea, and vomiting, and should not be consumed. This toxin is also present in bog laurel, *Kalmia polifolia*, a bog plant bearing opposite leaves and saucerlike pink to reddish flowers.

LINGONBERRY (*Vaccinium vitis-idaea*)

OTHER NAMES: lowbush cranberry, cowberry, rock cranberry, mountain cranberry, patridgeberry, foxberry

Heath Family (Ericaceae)

Habitat and Range

Lingonberry thrives in acid soils from northern Alaska and the Yukon Territory to British Columbia. Habitat is variable, from bogs and open woods to tundra.

Lingonberries:
Fruits of Many Names and Uses

When I worked in New Hampshire at the Fin and Fern Restaurant, we often served Swedish lingonberry torte — a delightful, somewhat mysterious dessert. The mystery was lingonberries, a fruit I'd heard very little about. I'm now aware that those precious Scandinavian imports abounded in the mountains of the Granite State. And I'm very happy they proliferate even more from British Columbia northward.

Perhaps you are familiar with them under the name "lowbush cranberries." Other nicknames include "mountain or rock cranberry" (for their habitat) and "cowberry, patridgeberry, and foxberry" (after creatures that consume them). The plant's specific name, *vitis-idaea*, means "vine of Mount Ida" and refers to a mountain in Crete (now called Mount Idhi) where the herb supposedly originated. Today, lingonberries have a generous geographical range and are ranked among the most important berries of the Northern Hemisphere.

Harvest Calendar

Fall: fruits. (Lingonberries are prime after the first frost. But since they persist on their stems, they're an important winter food source for pawing creatures and survivalists. In the spring the overwintered berries are greatly enjoyed by Eskimo children.)

Food Use

Though a bit too tangy for many palates when raw, lingonberries are delectable cooked

Lingonberries have delicate bell-like blossoms. (Jon R. Nickles)

Lingonberries often grow in patches with blueberries and crowberries. (Norma W. Dudiak)

Swedish Lingonberries

Contributed by R. W. Tyler

Clean lingonberries carefully. In a saucepan, cover berries with water and boil until berries have all popped. Then set aside to cool overnight. In the morning, measure cooled fruit-water mixture. Add an equal amount of sugar and stir well. Store in sterilized jars. (Less sugar may be used for a more tart sauce, but this may not keep as well.)

and sweetened. Lingonberry sauce substitutes well for commercial cranberry sauce; it also happens to be a good digestive aid for that lavish holiday dinner.

Lingonberries can be stored successfully by a number of methods. Use the centuries-old system of placing them in a crock, covered with water, in a cool place. Or fill a burlap sack with the firm, unbruised berries and keep them frozen outdoors.

Swedish lingonberries are simple to prepare, and store well in a cool cupboard for up to two years. The accompanying recipe is handy because exact measurements are not required.

Drying the berries is another storage option. To reconstitute the fruit, soak in water overnight. For cranberry sauce, just simmer the reconstituted berries and sweeten to taste.

Berries can be placed directly in containers in your freezer. When needed, rinse fruits in cold water and use like fresh.

Add fresh or frozen lingonberries to pancakes, muffins, and nut breads. Bake them as a two-crust pie for a "mock cherry" flavor.

Try them in cranberry catsup (see recipe in the section on highbush cranberry).

And don't forget to gather enough of these high-pectin berries for making preserves; they're superb for jams, jellies, and marmalade.

Lingonberries are also enjoyable as a juice, wine, or liqueur. The leaves steeped in hot water (add crushed fruits if desired) make a good beverage tea.

Physical Description

LINGONBERRY: *Vaccinium vitis-idaea; a.* Grows to 6 inches high; *b.* Fruits are tart, cranberry in taste, much smaller than commercial cranberries; *c.* Leaves are glossy, dark green above, and stiffly concave. Undersides of leaves are pale and have brownish spots. NOTE: Kinnikinnick (Arctostaphylos *uva-ursi*) leaves are similar, but lack the brown spots characteristic of lingonberry; *d.* Evergreen leaves alternate on stem. Leaf edges are rolled; *e.* Flowers are bell-shaped with 4 pinkish-white petals; *f.* Flowers and fruits grow in clusters at the top of the stem; *g.* Creeping rootstock.

Medicinal Use

Sipping lingonberry juice before dinner helps stimulate the production of gastric juices, thus facilitating digestion. Try nibbling lingonberries the next time you're plagued by upset stomach or heartburn. The custom of serving cranberries with large meals makes good dietary sense.

Timimun Mamirrutit reports that Inupiat Eskimo mash lingonberries, spread the berry paste on a cloth, and wrap this around the neck to treat sore throat. Similar paste-laden belts are applied to heal "red streaks about the waist." Crushed lingonberries are applied by many native peoples to relieve itchy skin eruptions, such as measles. The mashed fruits, blended with fish or seal oil, are often fed to invalids to restore strength.

Cosmetic Use

Lingonberry leaves are astringent and antiseptic, making them useful in herbal steams and rinses for oily skin and hair. Leaves can be added to disinfectant liniments.

Historical Use

Lingonberries have played a part in the legends and customs of many peoples. According to an ancient Breton tale recounted in *The Complete Book of Health Plants*, a young girl named Kermaris, whose arms had been cruelly amputated, miraculously regrew her limbs after bathing in an infusion of the berries.

Priscilla Kari relates an Athabascan story about a rather unintelligent fellow left in the woods to test his survival skills. Though he ate many berries, the poor fellow continued to grow weaker and weaker. Finally the man began eating lingonberries and quickly regained his strength. The Dena'ina say lingonberry is more sustaining than any other berry.

In the late 1700s, journals of the Canadian Hudson's Bay Company recorded that lingonberries "... are annually sent to England in considerable quantities as presents, where they are much esteemed." Today, gifts of the delectable preserves are still greatly appreciated. For Europeans, lingonberries are a traditional Christmas dessert. Give lingonberry gifts for the holidays and see what customs you can establish!

Other

The circumboreal herb, besides being a source of food and medicine, provides a source of dye for cotton and other natural fibers. Lingonberry stems and leaves, with alum as a mordant, yield yellow to red hues.

The University of Alaska Cooperative Extension Service attributes the excellent keeping qualities of lingonberries to the presence of benzoic acid (a preservative used in cosmetics). The fruits allow you plenty of time to experiment with them and find your own favorite use. All this talk of lingonberries draws me back to the kitchen, where I am still searching for a recipe for lingonberry torte.

Mare's tail often grows in dense patches in shallow or brackish water.

MARE'S TAIL *(Hippuris* species)

OTHER NAMES: goosegrass *(Hippuris* species); common mare's tail *(H. vulgaris)*, four-leaved mare's tail *(H. tetraphylla)*; mountain mare's tail *(H. montana)*

Water Milfoil Family (Haloragaceae)

Habitat and Range

Brackish or shallow waters, tundra ponds, and edges of creeks are habitats for mare's tail.

*H. vulgar*is, common mare's tail, ranges from northern Alaska and the Yukon to California.

H. tetraphylla four-leaved mare's tail, ranges from the northern coasts of Alaska and the Yukon to British Columbia.

H. montana, mountain mare's tail, ranges from the Alaska Peninsula, south-central Alaska, and the southwest Yukon to British Columbia.

Mare's Tail: "Horse" of a Different Family

At first glance, mare's tail looks like an immature vegetative horsetail. But the plants, despite their common equine names and superficial similarities, aren't even remotely related. Horsetail species reproduce by spores and are members of the horsetail family. Mare's tail species are seed-producers, and are members of the far more advanced water milfoil family.

Mare's tail is a perennial aquatic that thrives in shallow waters, drainage ditches, and edges of sluggish streams. Some horsetails like these conditions too, but horsetail stems can be quickly recognized by their pull-apart joints. You'll mangle mare's tail if you try to treat it in such a fashion.

Harvest Calendar

Fall to spring: stems and leaves. (This is the traditional season for harvesting mare's tail; for survival purposes, though, it could be collected in any season.)

Food Use

Grace Johnson of Nome, Alaska, tells of her husband returning from spring hunts with brown, wintered-over mare's tail. Plopped in boiling water, mare's tail astounded her by

turning kelly green. "The plant is excellent cooked with goose," said Johnson, "and it tastes just like Swiss chard."

In St. Marys, Alaska, Justina Mike gathers mare's tail in fall when the ice forms. She boils it and serves it with fish eggs. The University of Alaska Cooperative Extension Service adds that Eskimos often cook mare's tail in water with seal oil; sometimes fresh seal blood is added to the soup.

On summer camping trips I've added chopped mare's tail to salmon chowders. At that time of year it has a strong flavor I can only describe as tasting very "green."

Duck Soup

2 ducks, skinned
2 quarts water
2 cups mare's tail
1/2 cup chopped chives
Salt and pepper to taste

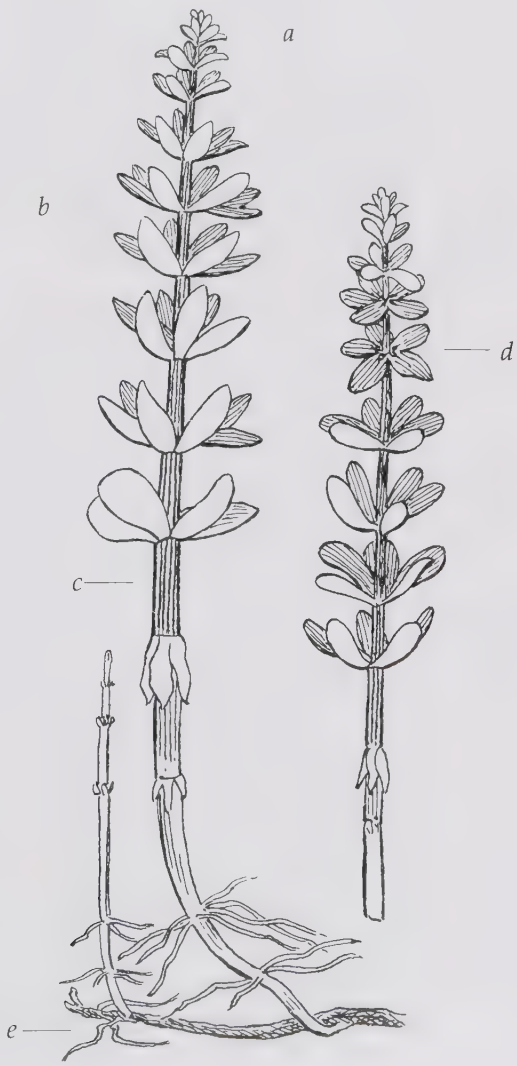
Combine all ingredients in a large pot. Boil together until duck meat falls off the bones. Remove bones. Skim off fat. Reheat and serve. Serves 4 to 6.

Medicinal Use

Ancient herbalists employed mare's tail for internal and external bleeding. It was a favorite remedy of Culpeper, who prescribed the juice and decocted herb as a drink for those with ulcers; these fluids were also used as a wash for skin irritations.

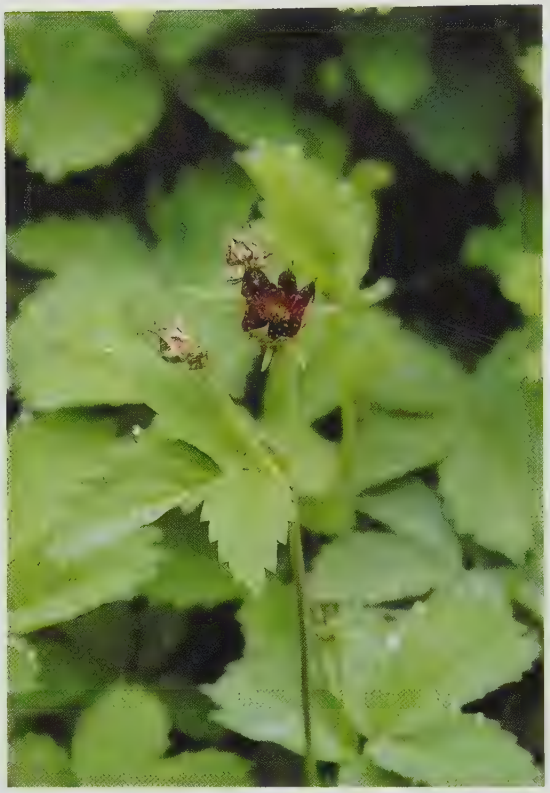
Other

A Modern Herbal says that mare's tail is ". . . supposed to assist in purifying the putrid air of marshes by absorbing a great quantity of marsh gas." *Hortus Third* reports that the plant is sometimes cultivated in bog gardens or pools. Mare's tail attracts wild ducks who like to feed on it.



Physical Description

MARE'S TAIL: *Hippuris* species; *a.* Can grow to 24 inches, but is often seen 6 to 12 inches high; *b.* Leaves are in whorls. Number of leaves is variable with species, ranges from 4 to 12; *c.* Stem is erect, simple, and does NOT pull apart like horsetail; *d.* Flowers are small and inconspicuous. They have 1 stamen (with red anthers) and produce 1 seed. Flowers grow at intersection of leaf and stem (leaf axils); *e.* Creeping underground rootstock.



Marsh fivefinger is a *Potentilla* with purple flowers. Most species have yellow blossoms.

Shrubby cinquefoil is an attractive ornamental.

MARSH FIVEFINGER (*Potentilla palustris*)
SHRUBBY CINQUEFOIL(*Potentilla fruticosa*)
SILVERWEED (*Potentilla anserina* and *Potentilla Egedii*)

OTHER NAMES: purple cinquefoil, fivefinger (*P. palustris*); bush cinquefoil, tundra rose (*P. fruticosa*); wild sweet potato, moor grass, goose tansy (*P. anserina* and *P. Egedii*).

Rose Family (Rosaceae)

Habitat and Range

As its common name indicates, marsh fivefinger is abundant in marshes and wet meadows. Shrubby cinquefoil favors wet and dry ground, and lowlands and mountain slopes. Both fivefinger and cinquefoil range from northern Alaska and the Yukon south to California.

Silverweed species are common on seashores and waste places from Alaska and the Yukon to California.

Potentillas: Astringent Teas

Potentilla is a large and complex genus of the North Temperate Zone. Pollen samples must be studied with an electron microscope to positively identify many species. Botanical novices are fortunate that only about thirty of the two hundred *Potentilla* species worldwide occur in the Pacific Northwest. Those of special interest to foragers are the easily recognized silverweed (with its distinctive strawberrylike runners), marsh fivefinger (with its unusual brownish-purple blossoms), and shrubby cinquefoil (with its shrubby growth and showy yellow flowers).

Harvest Calendar

Fall through early spring: silverweed roots.
Spring and summer: *Potentilla* leaves.
Summer: entire *Potentilla* plant for medicinal purposes.

Food Use

Silverweed roots are a survival food with many nonemergency applications. The scrubbed roots can be added to seaside stir-fries and soups. Try them steamed and topped with herb butter. The cooked roots add a nutty

texture to salads and sandwich fillings; I like them added to Clam Cakes when beach camping.

Harvest only the roots of older plants, as they will be larger and fleshier; those of small plants are too tiny to be of much value — except to the herb! Nutritionally, silverweed roots are high in iron, sulfur, calcium, and magnesium.

The dried leaves of *Potentilla* species can be added to herbal tea blends. (See Caution, following.) *Flora of Alaska and Neighboring Territories* reports that marsh fivefinger was used as a tea by the Siberian Eskimos.

Medicinal Use

As the botanical name *Potentilla* indicates, these herbs are powerful. The entire plant is generally gathered as medicine. Roots, stems, leaves, and flowers are chopped, dried, and stored in airtight containers. Tinctures are often prepared for long-term retention of the plant properties. (See Sundew section for directions.)

The herbs are astringent, and reputed to tighten tissues and reduce inflammations of gums and tonsils. In *Medicinal Plants of the Mountain West*, author Moore reports that when *Potentilla* tea is drunk two or three times daily "it will speed up the healing of both esophagus and stomach ulcers or inflammations, but it should be used for a week or more, depending on the magnitude of the problem. A pot of the tea will lessen fevers and diarrhea." Since the

Clam Cakes

1 cup cooked, diced clams
1/4 cup scrubbed, chopped silverweed roots
1/2 cup chopped wild greens
2 eggs, beaten
1 1/2 cups dry pancake mix
Water
Grease for skillet

Mix first five ingredients together. Add enough water to form pancake batter consistency. Cook like pancakes in greased skillet. Serves 3 to 4.

Physical Description

SHRUBBY CINQUEFOIL: *Potentilla fruticosa; a.* Shrub, grows to 5 feet; *b.* Flowers are yellow with 5 petals; *c.* Leaves mostly with 5 leaflets. Leaflets may be smooth or with long hairs; *d.* Woody stem. Bark often loose and shredding.

SILVERWEED: *Potentilla anserina* and *P. Egedii; e.* Flowers yellow with 5 petals; *f.* Leaves are basal with many pairs of leaflets. Leaflets are green above, silvery below; *g.* Underside of leaves varies from smooth to pubescent; *h.* Plant with reddish runners (stolons).

MARSH FIVEFINGER: *Potentilla palustris; i.* Plant grows to about 2 feet; *j.* Petals are pointed and brownish-purple. Sepals are purplish; *k.* Leaves are pinnate with 5 to 7 leaflets. Leaflets are dark green above, paler and pubescent below.

Silverweed is common on Pacific Northwest beaches. Its reddish runners and bright yellow flowers are quite distinctive.

genus is widely distributed, it makes a good first-aid remedy.

Moore advises freely pouring the tea over the bare backs of horses and mules to prevent saddle sores. He also recommends placing *Potentilla* leaves and flowers in one's shoes to prevent blisters when hiking. The herbs can be added to salves for bleeding piles and rashes, and to lotions for irritated skin.

Cosmetic Use

Add *Potentilla* to facial steams for oily skin. Distilled *Potentilla* water is said to soothe sunburn, prevent pitting from smallpox, and remove freckles and pimples.

Historical Use

For natives in western Canada, silverweed was a prestigious plant. *Food Plants of British Columbia Indians* says patches of the herb were owned by chiefs. Commoners were granted permission to dig only the curly small roots near the surface; the largest, straightest, choicest roots were paid as tribute to the leaders. Roots were a valued gift at weddings.

Silverweed gathering was an annual event. Seasonal homes were erected near the harvest site. *Wild Flowers of the Pacific Coast* adds that when harvest was complete, the following prayer was recited:

> Look upon my wife and me and protect us, so that nothing may happen to us, friend!
> And wish that we may come back to live in you happily, o house, when we come next year to dig cinquefoil. Goodbye.

Other

Silverweed roots, which are high in tannin, have been used for tanning leather. Some writers say the plant's specific name, *anserina*, translates as "goose" in honor of the fondness geese have for this plant. Others insist the name stems from the Latin *argent*, meaning "silver," to describe the undersides of the leaves.

Fruticosa translates as "shrub," an apt description of the growth form of shrubby cinquefoil; another common name for this showy plant is tundra rose. The shrubs are sold by nurseries as ornamentals; enterprising gardeners, however, can easily adopt a few of these prolific plants from the wild. They are hardy and adaptable to a variety of soils and conditions. When transplanting, look for specimens with exceptionally large flowers.

Palustris means "of the marsh"; marsh fivefinger is abundant in wet areas. The common name cinquefoil (fivefingers) is often given to the *Potentillas*. The genus commonly has five leaflets, but other factors (including pollen samples) must be relied on for accurate identification of the many worldwide species.

Caution

Though there are no reports of toxic reactions from use of this genus, moderation is strongly advised. The herbs are astringent and contain tannins. Tannic acid (which is also contained in black tea) is a gastrointestinal irritant and a toxin to the kidneys.

MARSH MARIGOLD (*Caltha* species)

OTHER NAMES: cowslips, meadowbouts, palsywort, meadowbright, marybuds, horse blobs, kingcup, bull's eye (*Caltha* species); yellow marsh marigold (*C. palustris)*; floating marsh marigold *(C. natans)*; alpine white marsh marigold, two-flowered white marsh marigold (*C. biflora*)

Crowfoot Family (Ranunculaceae)

Habitat and Range

Marsh marigold habitat varies with species, from marshes and moist areas to edges of creeks, rivers, and ponds.

C. Palustris is a common species throughout Alaska and also grows in north and west-central Yukon and through British Columbia. Variation *asarifolia* ranges from Alaska to Oregon.

C. natans occurs sporadically through Alaska, the Yukon, and British Columbia.

C. biflora ranges from the southern Alaska Peninsula to Oregon.

C. leptosepala occurs from Alaska and British Columbia southward to Oregon.

C. Howellii grows from southern Oregon to California.

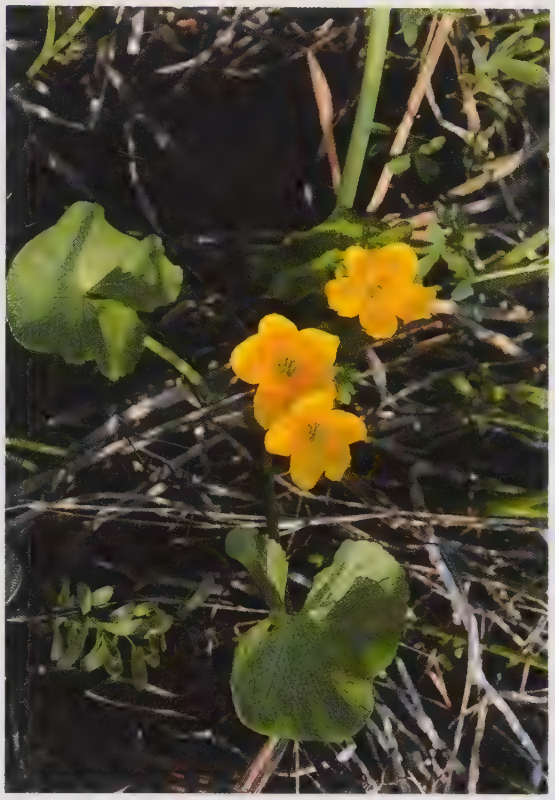
Marsh Marigold:
Plant for Potherb and Capers

Marsh marigold is not a "marigold" (*Tagetes* genus, Composite family), but rather a buttercup (*Caltha* genus, Crowfoot family). Its marigold and marybuds nicknames date back to the Middle Ages, when the plant *Caltha* was dedicated to the Virgin Mary and widely used in church celebrations. The herb is also an edible of ancient standing, despite the fact that it is quite toxic raw. Cooking renders the Virgin's flower safe for consumption.

Harvest Calendar

Spring to summer: leaves, buds, and flowers. (NOTE: Leaves are prime before flowering, could possibly be confused with wild calla in this stage. Read Caution, following, as well as the wild calla chapter before harvesting.)

Fall to winter: roots.



Leaves are most tender before buds open; they must be cooked or dried to remove toxins. (Norma W. Dudiak)

Sweet-and-Sour Marigolds

1 onion, diced
1/2 cup sliced mushrooms
3 tablespoons butter
2 apples, cored and sliced
1/4 teaspoon salt
1/4 teaspoon cinnamon
1/4 teaspoon nutmeg
2 tablespoons honey
1/4 cup water
1/3 cup dry white wine
2 tablespoons vinegar
2 cups cooked, chopped, drained marsh marigold leaves

In a large skillet, sauté onions and mushrooms in melted butter. Then add all ingredients except marsh marigold leaves. Stir well. Simmer 10 minutes. Add the cooked leaves and heat gently an additional 10 to 15 minutes. Serve immediately. Serves 3.

Food Use

Marsh marigold is a versatile vegetable long popular with Europeans, American pioneers, and native peoples. The cooked leaves are a favorite spring green. Marsh marigold buds are commonly pickled and served as capers; cooked buds can also be served as a side dish or added to soups and stews. The flowers are often fermented for wine-making. Boyd Shaffer of Soldotna, Alaska, reports digging marsh marigold's spaghettilike roots during winter survival classes and boiling them for a pasta subsitute. The boiled roots are also eaten by Bristol Bay Eskimos.

Foragers should be aware that *Caltha* species contain a poisonous glucoside, protoanemonin. This toxin can be removed by boiling (it dissipates at 180°F) or by thoroughly drying the herb. Though there are some reports of using very young leaves raw in salads (the poison principle intensifies with age), cooking the plant before ingesting is strongly advised.

Greens should be boiled until tender in two changes of water. Drain, discarding the cooking water, and enjoy the potherb topped with garlic butter, spices, or lemon juice. Since marsh marigold leaves thrive on the moist banks of the stream near my home, I frequently enjoy the greens as a side dish with fresh Dolly Varden. Later in summer, when the silver salmon run, I find the chopped cooked greens still palatable when simmered in soups, topped with cream sauce, or used in Sweet-and-Sour Marigolds.

Medicinal Use

Marsh marigold tea is an antispasmodic and expectorant brew for treating coughs, cramps, and convulsions. In *Medicinal Plants of the Mountain West*, Moore says that "small doses of a scant teaspoon or less of the chopped dried plant once or twice a day will stimulate flow of mucus in the lungs, digestive tract, and uterus, as well as loosen dried mucus in the bronchials and sinuses." He warns that overconsumption of the brew (or ingestion of the improperly dried plant) can cause kidney or liver inflammation.

Moore applies marsh marigold leaves externally in the form of a hot poultice to ease lower back pain, colonic spasms, and facial paralysis. Euell Gibbons, in *Stalking the Healthful Herbs*, reports a drop of juice squeezed from the fresh leaves is caustic and will effectively remove warts. Those with sensitive skin, however, should be careful as dermatitis can result from handling the fresh marsh marigold plants.

A Modern Herbal reports that tinctures made from the flowering herb ". . . may be given in cases of anemia in small, well-diluted doses."

Cosmetic Use

Marsh marigold blossoms have long been used as an ingredient in hair rinses and dry skin lotions. The floral tea, mixed with fresh cream, was a traditional beautifier for the complexion.

Other

Botanically, there are fifteen to twenty *Caltha* species worldwide. The botanical name stems from the Greek *calathos* (meaning a cup), and refers to the shape of the flowers.

Marsh marigold is sometimes added to home gardens. Grow from seed or from roots separated in the fall; plant in rich, moist soil. The flowers are interesting to watch as they open at sunrise and close at sunset.

Caution

Marsh marigold leaves superficially

resemble wild calla. Both plants contain toxins, but those of marsh marigold are volatile and can be removed by boiling. Be positive of identity.

Do not eat any *Caltha* species raw. Harvest the plant with gloves if you have sensitive skin; the fresh plant is acrid and can cause skin irritation.

Fresh marsh marigold leaves have caused livestock deaths. The dry plant, however, is harmless in hay.

Physical Description

MARSH MARIGOLD: *Caltha* species; *a*. Plants are generally 8 to 24 inches high. Some Arctic specimens are smaller; *b*. Flowers have petal-like sepals. Sepals are bright yellow for *C. palustris*, white for other Pacific Northwest species; *c*. Seed capsules; *d*. Buds; *e*. Leaves are round to kidney-shaped. Leaf edges may be round or with sharp teeth. Size is quite variable with species and conditions. Leaves of *C. palustris* grow to 7 inches wide; *f*. Stems of *C. palustris* lie on the ground, rising up at the end (decumbent). Stems of *C. natans* float on ponds or creep in mud. Both *C. biflora* and *C. leptosepala* have erect stems; *g*. Stems are hollow; *h*. Leaves are dark, glossy green; lighter on underside.

Top view of sphagnum moss in a bog. Moisture affects sphagnum's color, which ranges from pale greens to dramatic reds.

Physical Description
SPHAGNUM MOSS: Heads of sphagnum are tassel-like, forming a rosette (*capitulum*); *a.* Color varies with moisture, from pale greens to vivid reds; *b.* Sphagnum moss grows to about 6 inches in height. The peaty layers, however, can be hundreds of feet thick; *c.* Plants are soft to the touch, with weak stems; Leaves are veinless and translucent.

Sphagnum Seedling Starter

Grind fresh sphagnum moss and mix with sand and soil. Add plant seeds according to package directions. Transplant with moss clump when danger of frost is past.

SPHAGNUM MOSS (*Sphagnum* species)

OTHER NAMES: bog moss, flowers of Lapland

Sphagnum Family (Sphagnaceae)

Habitat and Range

Sphagnum moss is common in peat bogs and wet acid areas throughout the Pacific Northwest.

Sphagnum Moss:
Bog Bandage and Seedling Starter

The mossy green growth found on rocks, stumps, and bog floors has fascinated me since childhood, but it is only now that I find moss botany particularly interesting and moss "bodies" particularly useful in my life. Mosses are classified as nonvascular plants; that is, plants that lack a "plumbing system." Unlike vascular plants, they have no network of xylem and phloem cells to transport nutrients through their tissues. They also have no roots to absorb water and minerals from the soil; their rootlike appendages (called rhizoids) serve as anchors. Rhizoids also excrete chemicals that dissolve rock and create a base upon which these primitives can grow.

Like the lichens, mosses are pioneer plants. They thrive in the most inhospitable of conditions and pave the way for the spread of the more advanced flora. Through their death and decay, soil is built and in the case of sphagnum moss, lakes become filled with peaty layers, thus becoming bogs and eventually terra firma.

Sphagnum, because of its large, highly absorptive cells, is a moss of special interest and importance both commercially and in the home.

Harvest Calendar

Spring-fall: entire plant.

In areas of mild climate, sphagnum may be harvested year-round.

Medicinal Use

During the world wars, sphagnum was the official dressing of the British War Office. By the

time of armistice, England alone was manufacturing over one million sphagnum dressings each month. These dressings were popular due to their absorptiveness. Sphagnum's network of large cells and fine capillaries are responsible for the plant's spongelike qualities. A one-ounce dressing absorbs up to one pound of blood. In addition, sphagnum distributes fluids much more evenly than cotton. Wound dressings need to be changed less frequently, an important consideration under war conditions. During the world wars, moss drives were held in the Pacific Northwest to collect this moss for bandages.

A Modern Herbal reports that Sphagnol, a sphagnum distillate ". . . is authoritatively recognized as an extremely useful application in eczema, psoriasis, pruritus, hemorrhoids, chilblains, scabies, acne and other forms of skin diseases, while it is very beneficial for allaying irritation arising from insect bites."

Historic Use

Use of sphagnum dates back to the Gaelic Chronicles of 1014. Popular use in modern times began in Germany in the late 1800s, when a workman in a peat bog, unable to obtain any medical treatment, stuffed his laceration with dry sphagnum. When he was finally seen by a doctor ten days later, his wound had healed perfectly. Wounded animals have often been known to lie in sphagnum, which is naturally antiseptic.

In American Indian culture, sphagnum has been used for wounds, infant care, and menstrual pads. In Lapland, sphagnum was traditionally used in cradles for babies. This moss is considered the best of the primitive mattress stuffings, because it is very soft, plentiful, and highly resistant to decay. It has also served as animal bedding and packing material.

Sphagnum was a common chinking material for pioneer cabins. Alaskan June Middleton reports that "every fall my dad sent my brothers and me into the woods to gather sphagnum. The heat from the stove caused it to dry, crumble and fall out of the cracks so it had to be replaced yearly."

Originally the name *sphagnum* was used to describe nonflowering plants. Today it refers to a specific genus of moss.

Other

In Europe, many of the richest farmlands are reclaimed sphagnum bogs. Gardeners worldwide often add peat (compressed sphagnum) to their soils. On the Kenai Peninsula of Alaska, a commercial greenhouse harvests peat from local bogs for composting with fish scraps.

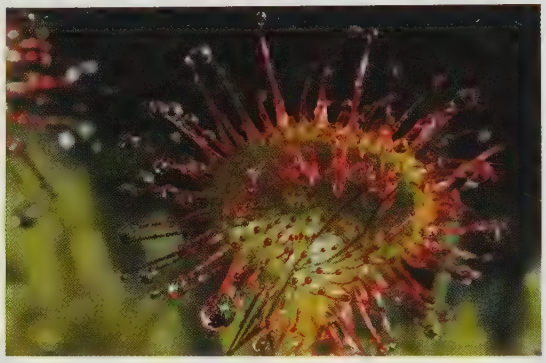
Nursery personnel find sphagnum valuable for germinating orchids and other difficult plants. Being highly absorbent, the sphagnum seedbed rarely requires watering, thus problems of the moss "damping off" are eliminated. In addition, the acidity of the moss helps provide a sterile plant medium. Plants grown in sphagnum can easily be transplanted with the moss clump intact, thus reducing transplant shock. I've used the accompanying mixture for germinating seeds, with good results.

George Ripley, originator of Alaska's Hope to Homer wilderness marathon, reports he uses sphagnum as boot insoles when his feet are blistered or in and out of water. I've used sphagnum satisfactorily as cushioning material in my Eskimo skin boots. To prepare, I simply pick a handful of sphagnum, clean it of leaves and other debris, wring it well to extract excess water, and then dry or use it as is.

When in the Bush, I've wrapped sphagnum in cotton or linen as menstrual pads. I find the moss far more absorbent and less irritating than the commercial products. In *Alaska's Wilderness Medicines,* author Eleanor Uiereck relates using sphagnum for diapering her infant and says it seems to prevent diaper rash.

Campers can use sphagnum as a sponge to absorb water from a leaky tent, or as stuffing in jackets for extra warmth. The heads of the moss, which have been dubbed "flowers of Lapland," are also delightful to study. In *Mosses and Lichens* Nina Marshall effuses "they are always a source of wonder on account of their habit of changing colour with every change in the humidity of the air."

D. rotundifolia is a sundew species with round leaves. It is the only species recorded for medicinal use.



Close-up of a sundew leaf shows the dewed hairs that trap insects. (Norma W. Dudiak)

SUNDEW (*Drosera* species)

OTHER NAMES: dew plant, red rot, youthwort, lustwort

Sundew Family (Droseraceae)

Habitat and Range

Sundews flourish in boggy edges of rivers and ponds and in peat bogs.

D. rotundifolia, the round-leaved sundew, ranges from central Alaska and the Yukon south to California.

D. anglica, the species with ascending spoon-shaped leaves, ranges from southern Alaska and the Yukon to California.

Sundew: Bog Carnivore and Mediterranean Cordial

If you aren't familiar with sundews, just visit the nearest peat bog, get on your hands and knees, and search carefully for one of the most intriguing plants in our region. Look for an herb barely bigger than your thumb with reddish leaves topped by "dewdrops." Those sticky glandular secretions provide the sundew with its favorite food, namely insects. The unwary winged creature who dares alight sticks to the dew and is further entrapped as the hairs curl inward slowly; the glandular heads then secrete fluids to digest the organism. These secretions also give the plant its botanical name, *Drosera*, which is Greek for dew.

Harvest Calendar

Spring to summer: leaves of *D. rotundifolia* for medicinal use. (Plants can be air-dried or tinctured.)

Physical Description

SUNDEW: *Drosera* species; *a*. Flowers are small with 5 white petals and 5 stamens; *b*. Flowers are on straight stalks that arise from the center of a basal rosette of leaves; *c*. Leaves of *D. rotundifolia* are round and lie close to the ground; *d*. Leaves of *D. anglica* are spoon-shaped and erect; *e*. Flower stalk grows 2 to 12 inches high. Seeds are in a small capsule with a loose, chaffy covering; *f*. Leaves of both species have reddish, glandular hairs that give the plant a dewed look. These sticky hairs trap insects.

Food Use

Sundew juice has been used to curdle milk. In the Mediterranean, sundews are mixed with brandy, raisins, and sugars and fermented into a cordial called *Rossolis*. Sundew's main use, however, has been medicinal.

Medicinal Use

The round-leaved sundew *(D. rotundifolia)* is reputed to have antispasmodic and expectorant properties, i.e., it relieves spasms and promotes the discharge of mucus. The plant has been used primarily in the treatment of whooping cough, bronchitis, asthma, and respiratory problems. To relieve a chronic cough, sundew is traditionally taken as a tincture (three to six drops in a cup of water) or a tea (one teaspoon dry herb to two cups water, sipped throughout the day). (See Caution, following.)

American Medicinal Plants reports sundew is valued in treating bronchial irritation, asthma, and other lung disorders. *The Herb Book* adds: "the plant contains an antibiotic substance that, in pure form, is effective against streptococcus, staphylococcus, and pneumococcus."

Since sundew is reported to be helpful for nausea, I took a dose of *D. rotundifolia* tincture when troubled by seasickness. The tincture immediately made me drowsy, and after a short nap, I awoke feeling fine. (It may be not suitable for those who have to operate boats or machinery!) I'm still experimenting with a seasickness formula. The accompanying recipe is a general procedure for making tinctures.

Cosmetic Use

Pure sundew juice is caustic and has been used for wart removal. Juice has also been blended with milk for lightening freckles.

Historical Use

In European folklore, sundew was recommended as an aphrodisiac, hence its nickname "lustwort" (wort meaning herb). "Youthwort" is another moniker. In *A Modern Herbal*, Grieve says that in America sundew was once touted as a cure for old age. My experience with sundew suggests the plant be called "sleepwort." A nip of sundew cordial might be an excellent nightcap for insomniacs.

Tincture

Place fresh herbs in a glass jar. Cover herbs with 80-proof brandy or vodka*. Keep in a warm dark place for at least 2 weeks, shaking daily. (Traditionalists recommend beginning tinctures on the new moon and straining on the full moon.) After desired time period has elapsed, strain herbs through muslin or double layers of cheesecloth. Squeeze herbs well to extract as much of the fluids as possible. Discard herbs and bottle the tincture. Dosage varies, depending on which herb is used. For sundew, 3 to 6 drops in a cup of water is maximum.

*NOTE: Cider vinegar can be used in place of brandy. Use vinegar tinctures for babies, alcoholics, and any person with a liver problem. Vinegar tinctures, however, have a shorter shelf life. They maintain potency for 1 to 2 years as opposed to 30 to 40 for an alcohol tincture.

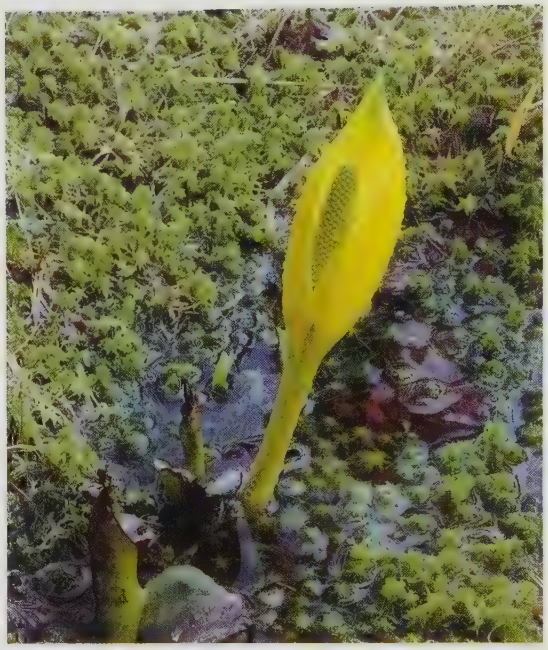
Other

There are about one hundred species of sundews worldwide; they range from China and the Cape of Good Hope to India, Europe, and South and North America. In the United States, they thrive from Florida to the Arctic.

Sundews are sometimes grown in bog gardens or as house plants under glass. They can be propagated by seeds, divisions, or cuttings of the rootstock. In Wrangell, Alaska, Lorraine Craik keeps sundews in a moist container in her kitchen, right by her supply of fresh fruit. The tiny herb gobbles any fruit flies that rest on its leaves!

Caution

Though I know of no reports of human poisoning from ingesting sundews, be aware that the herbs contain corrosive, irritant substances and should be used in SMALL doses only. *American Medicinal Plants* warns that daily doses of sundew have poisoned cats. Medical supervision is advised for internal use, as overdoses could endanger human health.



The fleshy spadix and bright yellow spathe make swamp cabbage easy to recognize. (Jon R. Nickles)

SWAMP CABBAGE (*Lysichiton americanum*)

OTHER NAMES: skunk cabbage, yellow arum, yellow skunk cabbage, skunk weed, meadow cabbage

Arum Family (Araceae)

Habitat and Range

Swamp cabbage thrives in swampy woods from Kodiak Island and the Kenai Peninsula of Alaska south to California.

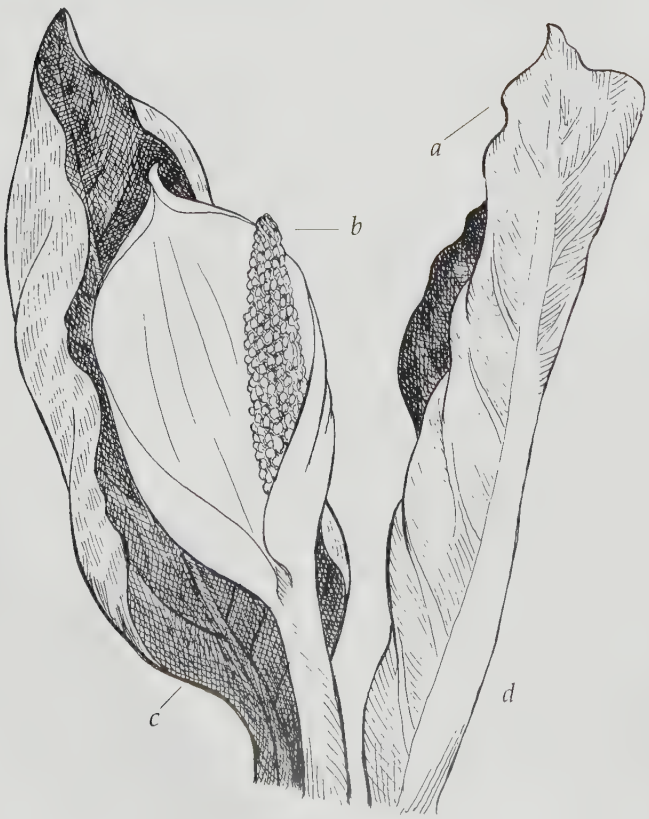
Swamp Cabbage: Antispasmodic Medicine

"Loose tunic" is how the genus name *Lysichiton* translates; it's a poetic description for swamp cabbage's bright yellow spathe, which wraps around the central flower spike. In early spring, these attractive clusters push through the earth in wet, swampy areas. Place one in an attractive bowl with water for a table decoration; you'll be happy to know these parts do not share the musty aroma of the leaves and rootstocks. The odor, by the way, reminds me of spring and swamps rather than skunks; hence I prefer the common name swamp cabbage over skunk cabbage.

Harvest Calendar

Spring to summer: leaves. BE CAREFUL not to confuse young swamp cabbage with the deadly false hellebore. False hellebore leaves have parallel veins and a pleated appearance. Swamp cabbage has net-veined leaves; in spring it bears a showy yellow spathe and greenish spadix.

Early spring or fall: rootstocks.



Physical Description

SWAMP CABBAGE: *Lysichiton americanum;* *a.* Leaves grow to 5 feet long and 1 foot wide; *b.* Many small flowers are crowded on a fleshy spike (spadix). In spring the spadix is backed by a bright yellow modified leaf (spathe); *c.* Leaves have net veins; *d.* Leaves have a swampy aroma.

Food Use

Food foragers should approach swamp cabbage with caution. Its leaves contain high concentrations of calcium oxalate crystals and can cause intense burning of the mouth and tongue. Many guides recommend boiling the plant to remove toxins, but several changes of water must be used, and the result is a rather flavorless pulp. *A Field Guide to Edible Wild Plants of Eastern and Central North America* insists boiling is not always effective and THOROUGH drying is the only completely reliable method for removing toxins. (Personally, I think there are much safer and better-tasting foods to eat in the woods!)

The underground stems (rhizomes) are rendered safe by drying and roasting. Rootstocks can be ground into a powder (said to be cocoalike in aroma and flavor) and blended with flour for baked goods.

Medicinal Use

The primary use of swamp cabbage is as medicine; the rootstock is famed for its antispasmodic properties. *Stalking the Healthful Herbs* recommends the dried root from recently harvested plants in teas for cough, catarrh, asthma and bronchitis. Dosage suggested is one ounce herb to one cup boiling water steeped for thirty minutes. Sip a wineglassful three times daily.

Taken in large quantities by itself, swamp cabbage can provoke nausea and vomiting; it is often used in combination with gentler herbs. The accompanying brew is a tonic tea for the lungs.

Store remaining tea blend in double paper bags, or in a glass jar in a dark closet. This tea is an ideal beverage for smokers, as well as those with coughs, colds, or asthma.

The dried rootstock has a short shelf life. It can be collected in spring for use through the summer, and in autumn for winter use.

Ointment prepared from swamp cabbage rhizome is recommended for skin tumors and ulcerous sores. It's reported very effective for relieving pain and promoting healing.

Historical Use

Micmac Indians inhaled the odor of crushed swamp cabbage leaves for headache. Other tribes used the dried ground rootstock as a styptic for cuts, and the sap as a treatment for ringworm.

Other

Botanically, the arum family has 115 genera and nearly 2,000 species. Philodendron, calla lily, and the Polynesian staple, taro, all belong to this family.

Lysichiton americanum of the Pacific Northwest is closely related to *Symplocarpus foetidus*, eastern swamp cabbage. Dracontium, a pharmaceutical drug noted for its antispasmodic properties, is commercially extracted from the latter species.

Swamp cabbage, with its showy yellow spathe, is one of the first plants to welcome spring. Bears relish it; on Vank Island in southeast Alaska (near Wrangell) I found evidence of deer browsing the leaves. Wildflower fanciers also love the plant. Swamp cabbage can be cultivated in wet ground. Propagate by division or seeds.

Caution

Swamp cabbage contains a high concentration of calcium oxalate crystals. If the plant is not thoroughly dried, it can cause intense burning of the mouth and tongue. Even when properly prepared, large amounts can trigger nausea and vomiting.

Smoker's Tea

2 cups dried coltsfoot leaves
1 cup dried nettle leaves
1/2 cup dried green horsetail
1/4 cup swamp cabbage root, sliced and thoroughly dried (dry the root in 200°F oven until crisp to positively remove toxins.)

Place tea ingredients in blender for 1 minute. Steep 1 heaping teaspoon in 1 cup boiling water for 5 minutes. Strain and serve. Serves 1.

Male flowers are stacked, brownish scales; the stamens release clouds of golden pollen. (Jon R. Nickles)

Sweet gale buds can be harvested winter or early spring as a spice.

SWEET GALE (*Myrica gale*)

OTHER NAMES: gale, bog myrtle, wax myrtle, meadowfern, Piment royal

Wax Myrtle Family (Myricaceae)

Habitat and Range

M. gale is a small shrub common in bogs and wet areas. It ranges from the Yukon River southward through the Alaska Panhandle, British Columbia, and west-central Oregon.

NOTE: *M. californica*, commonly called Pacific bayberry or California wax myrtle, also ranges from southwest British Columbia to California. This aromatic evergreen grows to thirty-five feet, and is often planted as a roadside ornamental. Leaves are shiny above and pale underneath. Flowers are in catkins, and fruits (which vary in color from purple to light gray) are usually in clusters. For food use, *M. gale* is recommended.

Sweet Gale: Pungent Spice and Flavorful Tea

In your mind's eye, picture a sphagnum bog. What plants do you imagine thrive in this acidic habitat? Which can you identify by odor alone? For me, the exercise conjures images of sundew, cranberry, dwarf birch, bog rosemary, crowberry, buckbean, wild iris, arnica, tundra rose, and the aromatic Labrador tea and sweet gale.

Like Labrador tea, the sweet-scented gale makes a fragrant wilderness beverage. But gale has many more applications well worth knowing about.

Harvest Calendar

Spring through summer: leaves.
Autumn through early spring: buds.

Food Use

When you are camping, fresh gale leaves make a pleasant tea. Try them blended with spruce tips, tundra rose leaves, and a few Labrador tea leaves. (See Caution, following.)

Ed Berg of Homer, Alaska, suggests using whole sweet gale leaves in place of bay leaf in recipes. Dry a supply of the deciduous gale leaves for winter use; powder them as a

seasoning for stews. The compact buds are also ideal as a spice; dry, grind, and use in the same manner as gale leaves. These can even be gathered in the winter. Gale goes especially well with meats and poultry; try gale goose for a special Thanksgiving.

Medicinal Use

In Maine, *M. gale* (called "meadowfern") is a traditional cold remedy. For flu and congestion, I like mixing gale tea with a bit of cayenne pepper and grated ginger. If taken when the first symptoms appear, it can often ward off the illness.

Dena'ina Athabascans drink gale tea for tuberculosis. They call the plant *dlin'a lu*, meaning "mouse's hand," in reference to the shape of the leaves.

The Chinese sip sweet gale infusions to settle upset stomach. Scandinavians brew a strong *M. gale* decoction as a cleansing external wash for itchy skin ailments, and to kill lice, fleas, and other insects. Leaves of various *Myrica* species have been ground into powder and inhaled as snuff for relieving nasal congestion. *M. cerifera*, says *The Herb Book*, has astringent and tonic properties and is used in ". . . astringent teas, gargles, and douches for diarrhea, hemorrhages, sore throat," and as ". . . poultices for wounds, cuts, and bruises."

Cosmetic Use

Fragrant sweet gale oil can be extracted through distillation. Commercially this is used to scent male colognes and aftershaves.

Historical Use

Using Wayside Plants mentions that Indians collected sweet gale buds for making dyes to color porcupine quills for ornamental garments and jewelry. Today, gale leaves, buds, and bark are still used as a source of natural dye. Hues range from yellows to gray-green, depending on plant part and mordant used; the dye is reported very effective for wool and calfskin.

Colonials decocted gale catkins and fruiting cones to obtain wax for coating their flatirons and for candlemaking. *M. pennsylvania* (commonly called bayberry), however,

Physical Description

SWEET GALE: *Myrica gale; a.* Shrub, generally 1 to 3 feet high; can grow to 5 feet under optimum conditions; *b.* Male flower spikes are 3/8 to 5/8 of an inch long and have stamens enclosed in stacked, brown scales; flowers are golden when open and release pollen; *c.* Female flower spikes are 1/4 to 3/8 of an inch long and pale red; *d.* Both male and female flowers have waxy glands; *e.* Fruits are green, aromatic, resinous nutlets; *f.* Leaves are toothed only at the top. Leaves are dark on top, paler underneath with dots of aromatic resin.

Goose á la Gale

1 goose
3 tablespoons butter, melted
2 tablespoons powdered sweet gale leaves and ground buds

Clean and skin the goose. Baste with butter and sprinkle with gale. Place in uncovered roasting pan and cook at 350°F until tender. (Allow 20 to 30 minutes cooking time per pound of goose.) Baste frequently with juices in pan.

Leaves are toothed only at their upper edges; they are extremely fragrant and are good in teas and seasoning blends.

was the preferred species, as it yields a fragrant wax superior in quality to the byproduct of *M. gale*.

Other

The British used sweet gale branches as a hops substitute in the manufacture of gale beer. This product, says *A Modern Herbal*, ". . . is extremely good to allay thirst."

The genus name *Myrica* comes from the Greek "myrike," meaning "to perfume"; the herb was traditionally used to perfume linens. I like placing the leaves in small cloth bags in closets and trunks with woolens; they give clothes a pleasant scent and repel moths.

When collecting gale in buggy bogs, I've also used sweet gale to ward off mosquitoes. Simply crush the leaves and rub them liberally on face and hands. Leaves need to be reapplied every fifteen minutes or so but offer blessed relief in the interim.

Tom Brown's Field Guide to Wilderness Survival suggests masking human scents with gale leaves when hunting. Keep the aromatic herb in your backpack in bear country to cover up food odors.

M. gale ranges from the muskegs of Alaska to the moors of Scotland. The shrub is sometimes planted as an ornamental. It does well in moist, peaty soil. Male and female flowers are borne on separate plants; make certain you have both sexes in your garden. Besides enjoying the fragrance of the shrub, you'll always have a tasty tea, spice, and cold remedy at your doorstep.

Caution

Though safe when used in moderation as a tea or spice, foragers should be aware sweet gale does contain a toxic oil. The oil is volatile and evaporates easily, but danger arises when the herb is boiled for long periods in a covered pot. Such strong decoctions are valuable for external use, as when killing vermin, but highly unsuited for internal consumption. It's been known to induce vomiting and abortion.

VALERIAN (*Valeriana* species)

OTHER NAMES: fragrant valerian, all-heal, tobacco root, phu, setwell, heliotrope (*Valeriana* species); Sitka valerian (*V. sitchensis*); marsh valerian (V. dioica); edible valerian (*V. edulis*); common valerian (*V. officinalis*)

Valerian Family (Valerianaceae)

Habitat and Range

V. capitata inhabits boggy meadows and moist slopes from northern Alaska and the Yukon to British Columbia. Subspecies *californica* extends from Oregon to California.

Other regional species include: *V. sitchensis* (Alaska and the Yukon to California), *V. dioica* (Alaska, British Columbia, and Washington), *V. edulis* (British Columbia and Washington), *V. officinalis* (British Columbia), and *V. occidentalis* (Oregon and California).

Valerian: Herb for Quiet Times

Though European valerian, *V. officinalis*, is the species "officially" used medicinally, other members of the genus are often substituted when the former is unavailable (as in many areas of the Pacific Northwest). *Valeriana* species commonly contain the alkaloids chatinine and valerine, which act as central nervous system depressants. Valerian is frequently prescribed to quiet the nerves and relieve insomnia.

Harvest Calendar

Spring and fall: roots.
Spring to summer: entire herb.

Food Use

Wild Edible Plants of Western North America reports that valerian roots are palatable if they are steamed for twenty-four hours before they are added to soups or ground into flour. Parched seeds are another edible. The main use of valerian, however, is as medicine.

Medicinal Use

Valerian is frequently used by herbalists for treating nervousness, hysteria, epilepsy, irregular menstruation, and migraine. It is a

Flowers of *V. capitata* are in a dense cluster (capitate).

Physical Description
VALERIAN: *Valeriana* species; *a*. Grows to 2 feet high; *b*. Flowers are aromatic, arranged in compact clusters; *c*. Individual flowers have 5 lilac or white petals and tubular shape; *d*. Upper leaves of *V. capitata* lack a stem (sessile). Upper leaves of *V. sitchensis* have leaf-stems (petioles). Basal leaves of *V. dioica* have long petioles; *e*. Leaves are in opposite arrangement; *f*. Upper leaves are reduced in size.

highly effective antispasmodic for relieving bronchial spasms, and stomach or menstrual cramps. Valerian may be taken as tea or tincture. Though the root is traditionally used, available species have such small roots that I generally use the entire herb. I find that a wineglassful of the fragrant tea sipped thirty minutes before bedtime is helpful to relieve insomnia. (See Caution, following.)

Back to Eden says valerian tea is excellent for children suffering from fever or childhood diseases such as measles. Valerian root is used to improve eyesight when the optic nerve is weak.

During World War II, European doctors frequently prescribed valerian root tea to calm civilians unnerved by the air raids. Whether your jitters are from noise pollution or too much caffeine, sip valerian tea (or a teaspoon of valerian tincture).

Cosmetic Use

Valerian is a soothing bath herb. Add a generous amount of valerian tea to your bath water to induce drowsiness. Some individuals, though, report this readies them for bed but not for sleeping purposes! Whether valerian is an aphrodisiac bath herb or a sedative one I'll leave for you to decide.

Historical Use

Valerian has been prescribed by physicians ever since the ninth century. Valerian was one of seventy-two plants blended together as a poison antidote by the ancient king of Pontus. According to German legend, valerian is a "conquering herb" worn by women in their waistbands; it was regarded as a female herb and was often prescribed for menstrual disorders.

Folklore reports that the Pied Piper's charisma came from the valerian root he carried. The root, which has been nicknamed "phu," is offensive to many people, but it enchants both rats and cats, creatures that enthusiastically tailed the Piper.

To me, one of valerian's most fascinating applications has been "to increase harmony between squabbling husbands and wives." Certainly, a cup or two of the brew would help mellow the mates. Perhaps this should replace

coffee as the common beverage at marital counseling sessions, as well as at international diplomatic meetings.

Other

The Valerian family includes some thirteen genera and four hundred species. Some say the botanical name honors Valerius, the first person to use this herb medicinally; others insist it stems from the Latin *valere* meaning "to be in health."

Besides using the herb as a calming beverage, you can pamper your feet with its antiseptic powder, pleasure your cat, bait a rat, and brighten your garden. The pretty herb does well in damp soil and grows from seed or cuttings. I especially like valerian as an ingredient in dream pillows. The flowers, which are wondrously fragrant, are said to prevent nightmares.

Caution

General dosage for valerian is a small wineglassful of the tea taken one or two times day. *The Herb Book* warns that "large doses or extended use may produce symptoms of poisoning." *Herbal Medications* adds that ". . . sufficient quantities are bound to produce vomiting and drowsiness. Usual amounts do not represent a serious hazard." Do not take the tea for more than two or three weeks, as depression can result.

Since valerian can provoke drowsiness, do not operate machinery after use. Though most people experience sedative effects, some find the herb stimulates their system.

Valerian leaves are distinctive in appearance; flowers vary from lilac to white. The plant is a traditional sedative. (Verna Pratt)

Dream Pillow

Cloth
1 cup dry valerian flowers and leaves (for quieting the nerves)
2 cups dry pineapple weed blossoms and leaves (for peaceful dreams)
1 cup rose petals and leaves (to prevent melancholy)
l cup dry wormwood leaves and flowers (to stimulate the dream life)
Down feathers or stuffing to fill pillow

Cut cloth to desired pillow size. Place finished sides of material together and sew 3 edges. Invert pillow and fill with herbs and stuffing. (Add extra valerian, pineapple weed, and rose, and decrease wormwood if you are prone to insomnia. Add extra wormwood if you long for vivid dreams.) Handsew final edge.

Water hemlock is common in wet, marshy areas.

Physical Description

WATER HEMLOCK: *Cicuta mackenzieana; a.* Grows 2 to 6 feet; *b.* Flowers are in umbrellalike cluster (umbel); rays of umbel are fewer than *C. Douglasii; c.* Leaflets are long and narrow with toothed edges.

POISON HEMLOCK: *Cicuta Douglasii; d.* Small white flowers arranged in umbels; 12 to 20 rays per umbel; *e.* Leaflets are lance-shaped to egg-shaped with saw-toothed edges; *f.* Stem stout, may be single or few together; *g.* Roots of both *Cicuta* species have thick, tuberous roots with a strong scent. They usually exhibit chambers. Both water and poison hemlock are very POISONOUS!

g

WATER HEMLOCK (*Cicuta mackenzieana*)
POISON HEMLOCK (*Cicuta Douglasii*)

OTHER NAMES: beaver poison, cowbane, poison parsnip, fever root, false parsley

Parsley Family (Umbelliferae)

Habitat and Range

Water and poison hemlock inhabit marshes, stream banks, and moist meadows.

C. mackenzieana ranges from the Brooks Range and the northern Yukon to northeastern British Columbia.

C. Douglasii ranges from central and south-central Alaska south to California.

Other deadly hemlocks of local distribution include *C. bulbifera* (British Columbia to southern Oregon) and *C. Bolanderi* (California) and *Conium maculatum* (Washington to California).

Water Hemlock and Poison Hemlock: Herbs to Avoid

The Umbelliferae family is a grouping that includes some three hundred genera and three thousand species. In the family are such garden notables as carrots, parsnips, parsley, and celery, and spices like dill and caraway. Wild Pacific Northwest edibles include lovage, cow parsnip, and angelica. Poison and water hemlocks are deadly family members. Appearance is similar, so positive identification is a must!

The *Cicutas* have been called the most violently poisonous plants in the North Temperate Zone. Just one bite of the rootstock is enough to terminate one's life on a most unpleasant note. Many hemlock poisonings occur when children make whistles from the hollow stems. Youngsters also find roots brought to the surface by spring frost action tempting to nibble. Adults have been known to mistake the roots as a wild parsnip and foragers sometimes carelessly add hemlock leaves to potherb mixtures. It is said severe poisonings have also occurred when campers smoked leaves of *C. mackenzieana*, believing it was some sort of wild marijuana. Livestock have died from eating spring shoots and from drinking water near bruised hemlock roots. (See Caution, following, for details.)

Harvest Calendar

Poison and water hemlock are unsuitable to harvest.

Historical Use

To induce permanent sterility, writes Weiner in *Earth Medicine, Earth Foods,* Cherokees chewed hemlock root for four consecutive days. Rafinesque, a botanist of the 1700s, said that a similar remedy was taken by Indians ". . . tired of life and desiring a speedy demise." Historians generally believe Socrates was killed by a different but equally deadly hemlock, *Conium maculatum. Conium* was also used by medieval herbalists "to keep maiden's teats small," and to destroy lust. As an external application, it was once used for rheumatic pain.

Throughout the ages, hemlocks of various species have been used to execute both criminals and kings. Oregon Indians soaked arrows in *Cicuta* juice, rattlesnake venom, and decayed deer liver to poison tips for hunting.

Other

The *Cicutas* are plants everyone should readily recognize. I like having a collection of toxic plants to show potential foragers. The deadly plants are relatively few in number and easy to learn.

Caution

Cicuta's toxic properties are attributed to cicutoxin, a resinlike substance found in all parts of the plants, but most concentrated in the root. *Poisonous Plants of the United States* describes cicutoxin as ". . . a clear, brown, sticky substance with an acid reaction, which is soluble in alcohol, chloroform, ether and dilute alkalis."

Cicutoxin depresses the respiratory system. Typical symptoms, which appear fifteen minutes to one hour after ingestion, include salivation, followed by diarrhea, tremors, severe stomach distress, and violent convulsions. Without treatment, one generally dies within eight hours of ingestion. Although vomiting should usually not be induced when convulsions are likely to occur (due to chance of aspiration into the lungs), inducing vomiting may be the only chance of survival. Marsh, et al., in a United States Department of Agriculture bulletin, state that "if free vomiting is promptly induced, the patient is likely to recover." (See Treatment of Acute Poisoning at back of book.)

Animals poisoned by *Cicuta* are given injections of anticonvulsant drugs to control convulsions and a purgative agent to remove toxins. Marsh et al. warn that "ordinarily the convulsions are so violent that nothing can be done for the animal."

NOTE: Though poison and water hemlock usually have roots with chambers, Daisy Lee Bitter of Homer, Alaska, has found young roots of *C. mackenzieana* that lack pronounced separations in the roots. She comments that the pungent odor of the roots is the most diagnostic characteristic in recognizing *Cicuta.*

Plant Specimens

4 x 6-inch index cards
4 x 6-inch clear contact paper
Plant specimens

Plant specimen may be placed in a plant press to dry (see Acid Kelp in the Algae section) and mounted on index cards at home. This is a necessary step if plant is damp, or leaves are thick and succulent. On dry days, however, I have mounted plants on cards directly in the field. Remove backing from contact paper and carefully place plant on the sticky sheet. Place index card on the mounted plant and press together firmly. Label plant with both common and botanical names. The specimen will have to be trimmed or folded to fit the card. Try to include key areas of identification — the flower or fruit, leaf arrangement, etc. On the back of the card, list information concerning the plant, its edibility or toxicity, habitat, size, and date and place collected.

NOTE: If pressing toxic plants, make certain to wash your hands thoroughly afterward. Do not handle such plants if you have open wounds on your hands. Ideally, you should wear disposable protective gloves.

Note the distinctive flower spathe and pointed leaf tips of calla. (Norma W. Dudiak)

Flowers, fruits, and leaves all contain substances that can cause intense burning of the mouth and throat. (Norma W. Dudiak)

WILD CALLA (*Calla palustris*)

OTHER NAMES: calla, marsh calla, water arum, water dragon

Arum Family (Araceae)

Habitat and Range

Calla favors the same habitat as cattails and marsh marigolds, namely swamps, marshes, and drainage ditches.

C. palustris ranges locally from central Alaska and the Yukon to north-central British Columbia.

Wild Calla: Athabascan Aid for Arthritic Joints

The first time I ever encountered wild calla, I thought I'd located a prime patch of marsh marigolds. The noticeable lack of showy yellow marigold blossoms, however, prompted a closer investigation. I was in the right habitat (the margin of a small pond) and had found leaves of the approximate shape, but my first impression was far from correct. Discovery of the fleshy flower spike backed by a heart-shaped bract quickly established calla's identity.

Despite the similarity in name and habitat (the species name for both plants is *palustris*, meaning of the marsh), wild calla and marsh marigolds are widely separated in the plant kingdom. Calla is a member of the Arum family and, like its relative swamp cabbage, it bears a fleshy flower spike (spadix) backed by a modified leaf called a spathe. The heart-shaped calla leaves come to a distinct point.

C. palustris, commonly called marsh marigold, belongs to the more advanced crowfoot family. It has bright yellow flowers and kidney-shaped leaves with rounded edges.

Harvest Calendar

Spring: leaves.

Summer: berries.

Fall: rootstocks and seeds.

NOTE: See Caution, following, before harvesting! Calla has been used as food, but must be prepared in a manner that thoroughly removes its toxins. The main use I've encountered in the Pacific Northwest has been medicinal.

Food Use

According to some books, boiling OR drying effectively eliminates calla's peppery, toxic acids. In my boiled calla taste test, however, the initial pleasant flavor was quickly replaced by intense throat-on-fire sensations. Peterson insists (and I agree) that THOROUGH drying, or drying AND boiling, is necessary to neutralize the toxins. *A Field Guide to Edible Wild Plants of Eastern and Central North America* adds, "the thoroughly dried seeds and rootstalks can be ground into an unpalatable but nutritious flour in times of need." Native peoples have also reportedly boiled the dried berries as food. I do not recommend calla for internal use.

Medicinal Use

Athabascan elder, Howard Luke of Nenana, Alaska, collects wild calla leaves in spring before the flowers develop and dries them well. He then steeps them in water as tea for colds, flu, and arthritis. Luke enthusiastically endorses using the plants externally in the steam bath to ease aches and pains. Those troubled by rheumatism, arthritis, or simply sore muscles may want to try the accompanying herbal bath.

Other

C. palustris is the only *Calla* species found in the North Temperate Zone. It is unrelated to the calla lily of California (a member of the *Zantedeschia* genus).

Wildflower enthusiasts sometimes transplant calla in wet places. It thrives at the edges of garden ponds. Though you probably don't want to eat calla, do enjoy it. As the Greek name *kallos* indicates, the plant is indeed "beautiful"!

Caution

Calla contains a high concentration of calcium oxalate crystals. Eating the plant can cause intense burning of the mouth and throat. In case of poisoning, give the patient large quantities of milk, and seek medical assistance.

Ache-Away Bath Brew

1 cup calla leaves, throughly dried
2 cups wormwood leaves, dried
1 cup horsetail, green vegetative portion, dried
6 cups water

Boil mixture for 1 hour, or heat on wood stove overnight. Strain fluids and add to bath water. Wrap the hot herbs in a cotton or linen cloth and rub on sore areas as you relax in the bath.

Physical Description

WILD CALLA: *Calla palustris; a.* Calla grows to 10 inches high; *b.* Leaves are glossy and heart-shaped, with a distinctive pointed tip; *c.* Leaves are on long stems (petioles); *d.* Central flower spike (spadix) is covered with bisexual flowers. The spadix is backed by a distinctive modified leaf (spathe) that is white on top, green underneath; *e.* Berries are red with few seeds; *f.* Plant has a thick underground stem (rhizome) and long skinny roots; *g.* CAUTION: Poisonous unless properly prepared.

Wild iris is a showy wildflower, highly adaptable to the home garden.

WILD IRIS (*Iris* species)

OTHER NAMES: wild flag, blue flag, dragon flower, liver lily (*I. setosa*); western blue flag (*I. missouriensis*); yellow iris (*I. pseudacorus*); Oregon iris (*I. tenax*)

Iris Family (Iridaceae)

Habitat and Range

There are numerous *Iris* species in the Pacific Northwest. Plant properties are quite similar. Moist meadows, bogs, and shores are prime habitats for wild iris.

I. setosa ranges from the Brooks Range and Seward Peninsula of Alaska southward to the Panhandle and northern British Columbia.

I. missouriensis, is a large-flowered species that ranges from British Columbia to California.

I. pseudacorus, a species easily distinguished by its showy yellow flowers, grows from southern British Columbia to Washington.

I. tenax, the Oregon iris, has flowers ranging in color from white to yellow or purple. Though common from western Washington to northwest Oregon, it also strays to northwest California.

Wild Iris: Showy Wildflower

Wild iris looks like it just escaped from a cultivated garden. This eye-catcher, however, is a hardy northern native; *I. setosa* is one species said to have originated in Siberia.

Though beautiful to look at, wild iris can be irritating to touch. Some people experience allergic reaction when handling iris.

Harvest Calendar

Summer: flowers.

Autumn to winter: rhizome and seeds.

Food Use

Wild iris is a potent plant, and generally not recommended as food. Though I have heard rumors that southeast Alaska Tlingit Indians eat the dried rhizomes, details of preparation were unknown. Plant toxicity, unfortunately, is not always constant. Plants that are usually safe can sometimes be unsafe, due to particular minerals or contaminants in the soil. Conversely,

potent plants like iris may be innocuous, given the variables of species, soils, and cooking methods. Until more conclusive information is available regarding regional species, I'll continue regarding acrid iris rootstalks as unsuitable for consumption.

In *Alaska's Wilderness Medicines,* Viereck describes gathering a handful of wild iris seeds in winter by tipping the capsules, grinding them with a coffee mill, and brewing them to make a delicious coffee substitute. Though this might be tried as an occasional beverage, it is not advisable to consume it frequently. According to *Medicinal Plants of the Mountain West,* "...even the feeblest *Iris* can be toxic in immoderation."

Medicinal Use

The resinous complex, iridin, which is active in iris rhizomes, acts powerfully on the liver. Oregon herbalist Ed Smith recommends taking five to ten drops of wild flag tincture (made from the dry rootstalk) for lymphatic swelling; overdoses, he warns, cause diarrhea and vomiting. (See Caution, following.)

Iris rootstalks, boiled in water and macerated between rocks, are a traditional poultice for treating staph sores and for relieving the pain and swelling of injuries. *Gerard's Herbal* (1636), reports *Iris* "... doth in two daies at the most take away the blacknesse or blewnesse of any stroke or bruse." When a friend bruised the sole of her foot on a rock, a foot massage with iris-arnica herbal oil relieved her discomfort. By morning, she was able to proceed on a ten-mile hike. (For directions, refer to Silverberry section. Substitute two cups dry iris flowers and two cups dry arnica for the silverberries.)

Cosmetic Use

Washing with a decoction of dry wild iris rhizomes is an ancient beauty treatment for clearing the complexion. Tea from iris flowers has been used as hair conditioning rinse. The ground rootstock has been used in body powders, but some users report allergic reactions.

Historical Use

In mythology, Iris was the goddess who

Physical Description

WILD IRIS: *Iris setosa* (illustrated); *a.* Grows $1^1/_2$ to 2 feet high; *b.* Petals are in an upright arrangement (standards); *c.* Three petal-like sepals are in drooping arrangement (falls). They are blue with dark veins; *d.* Leaves are swordlike; those of subspecies *interior* are narrower than subspecies *setosa; e.* Seeds are in capsules; *f.* Stem is stout and roundish.

Iris Starts

Contributed by Beth Cummings, Homer, Alaska

3 x 3-inch plastic container with drainage holes, about 3 inches high
Seeds from 1 or 2 iris capsules
Potting soil

Two to three weeks before spring breakup, place soil in container. Space seeds about an inch apart and cover lightly with soil. Check daily, watering as needed to keep soil moist.

After the ground thaws, place the container of seeds in a shallow depression in a garden area, where seeds will receive normal moisture and be undisturbed by pets or children. (The soil level in the container should be even with surrounding ground.) Seeds are likely to germinate in midsummer. After starts are well established, transfer them to permanent locations. Be patient — flowering may not begin for a few years.

served as messenger for Zeus and Hera, transmitting messages between heaven and earth on the pathway of a rainbow. Since Iris also led women's souls to the Elysian fields, Greeks planted irises (their word for rainbow) on the graves of deceased female relatives.

The iris served as the *fleur-de-lis* emblem for the French monarchy. Egyptians carved irises on ruler's scepters and on the Sphinx's brow; to them the three falls represented courage, faith, and wisdom. The dry, ground rootstalk of *I. florentina* and various other species yields a violet-scented powder; this was used through the ages for perfuming linens, powdering French wigs, and fixing scents in potpourris.

Other

Iris floral infusions are used in the testing of acids and alkalis. The blossoms are an excellent source of home dye when collected in dry weather. In *Nature's Colors,* Grae reports violet blue shades from *Iris* flowers (using a chrome mordant) and black hues from rhizomes (with ferrous sulfate as mordant).

Wild iris is a popular bee flower; floral markings on the drooping sepals serve as landing pads and help guide the insects to their source of sweet nectar.

Gardeners readily welcome the hardy, good-natured iris. This ephemeral beauty is well suited to wet ditches and average soil. Rhizomes can be divided in spring (in fall in mild areas) and transplanted; crowns should be slightly exposed.

Seeds can be gathered as soon as they turn brown and rattle loosely in their pods. They are slow to germinate, but the accompanying method is quite reliable.

Caution

Wild iris contains an oleoresin (iridin), which acts strongly on the liver and gastrointestinal tract. It can cause burning and violent diarrhea. Do not take internally without medical supervision.

Sensitive individuals can experience severe rashes from handling the plant.

YELLOW POND LILY (*Nuphar polysepalum*)

OTHER NAMES: cow lily, spatterdock, wokas, brandy bottle, pond collard

Water Lily Family (Nymphaeaceae)

Habitat and Range

Yellow pond lilies, *N. polysepalum*, are common in shallow ponds and sluggish streams from northern Alaska and the Yukon southward to California.

Yellow Pond Lily: Source of Wilderness Popcorn

The photogenic yellow pond lily is a distinctive, readily recognized plant with edible roots and seeds. Identifying this wild water lily, however, is far simpler than harvesting its gifts; the latter can easily be an exercise in exasperation.

The problem lies in the habitat. The pond lily is indeed an aquatic, one that generally favors water slightly too high for hip boots. If you're equipped with a canoe, collecting the mature seedpods becomes easy: just paddle out, clip the mature fruits, and drop them in your sack.

Digging the rhizomes (underground stems), however, remains a challenge. Though some guides insist you can pry them from the pond bottom with a pointed stick, my experience coincides with that of other foragers: to obtain roots, you must dive.

Since the pond lily favors muddy, murky shallows, I don't find underwater exploration for the rhizomes especially enticing. In addition, the rootstocks are prime in early spring and fall, the precise time when a dive in cold Northern waters is least appealing. If you're the type who craves invigorating experiences, then you're apt to thoroughly enjoy harvesting pond lily rootstocks for your campfire supper. Personally, I'll continue to gather seeds by canoe.

Harvest Calendar

Late summer to early autumn: seeds.
Spring and fall: rootstocks.

Yellow pond lilies are common in shallow ponds; their large floating leaves and bright blossoms make them easy to recognize.

Food Use

Seeds are the easiest pond lily product to harvest. To prepare, collect the mature green pods and dry them for a few days. Then break apart and separate the seeds. Seeds can be steamed as a dinner vegetable, dried and ground for flour, cooked like oatmeal (one part seeds to two parts water) as a breakfast cereal, or served as mock popcorn.

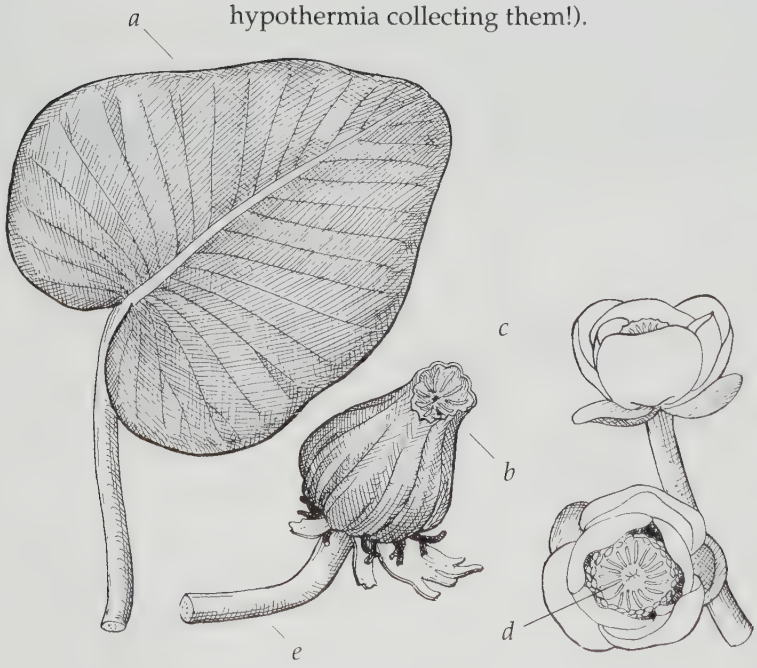
Some field guides classify the rootstocks as a tasty vegetable. Others insist they are bitter and inedible, even after boiled in changes of water. I haven't yet had a firsthand taste test, so I leave this experiment to you. To prepare, scrub the rootstocks well. After baking, boiling, or roasting, peel and discard the outer rind. Add the sliced center to soups and casseroles, or mash the inner pulp with butter and seasonings. The rootstock is high in starch and could be a good survival food (if you don't get hypothermia collecting them!).

Medicinal Use

Leaves and rootstocks have been used as poultices for boils, ulcerous skin conditions, and swelling. The rootstock infusion (made by steeping two tablespoons chopped rhizome in one cup boiling water) is a traditional gargle for mouth and throat sores, and a douche for vaginal inflammation.

Historical Use

The yellow pond lily was a staple food of various Native groups. The ripening of the seeds was a time of thanksgiving and celebration, and was greeted with feasts, dances, and religious ceremonies. According to ethnobotanists, Turner and Szczawinski, the Klamath Indians of California harvested seedpods from a marsh that contained 10,000 acres of pond lilies. The pods were sun dried and pounded to loosen the seeds. An alternative method was to bury pods in underground pits



Physical Description

YELLOW POND LILY: *Nuphar polysepalum;* *a.* Glossy green leaves, to 12 inches long, float on surface of ponds; *b.* Fruit contains edible seeds that pop like popcorn; *c.* Flowers have 7 to 9 bright yellow petal-like sepals; *d.* Anthers are reddish; true petals are wedge-shaped and hidden by the stamens; *e.* Stems are round; *f.* Rhizome is thick and fleshy, well submerged by mud and difficult to dig.

until they fermented into a mucilaginous mass; seeds were then washed free of the husk.

Rootstocks were also collected, often from muskrat dens. To avoid hardship to the animals, gifts of food were left in trade for what was taken.

Other

The botanical name *Nuphar* is Greek for "water lily"; the species name *polysepalum* means "many sepals." The family name Nymphaeaceae translates as "water nymph" or "water virgin." Water lilies were once believed to have anti-aphrodisiacal properties, and were used, in art, to represent virginity. *The Herb Book* says "the plant has often been used as a symbol of purity and chastity, for the water lily flower holds itself erect as if disdaining to touch the murky water surrounding it."

Water lily leaves, like the flowers, are highly distinctive in appearance. The large leaves commonly float on the pond surface; they are buoyed by large air spaces within. Externally, a waxy coating waterproofs the leaves, enabling the leaf stomata to breathe freely. The large leaves of pond lily provide shelter for fish. The seeds are food for ducks, and rootstocks offer sustenance to beavers and moose.

Water lilies reproduce both by seed and rhizome, and are said to be of easy culture. *Hortus Third* reports that roots of wild species can be divided in early spring when leaves first appear and transplanted to sunny garden pools that contain two feet of water. Soil should be a mixture of loam and manure, with a top covering of washed sand or gravel to keep soil intact. (The root crown must remain slightly above the level of the sand.)

In Turkey, pond lily flowers are distilled into a beverage called *pufer cicegi.* Coincidentally, the pond lily produces alcohol even without man's help. *The Audubon Society Field Guide to North American Wildflowers* says "when the mud in which the stems grow loses oxygen, a small amount of alcohol instead of carbon dioxide is produced."

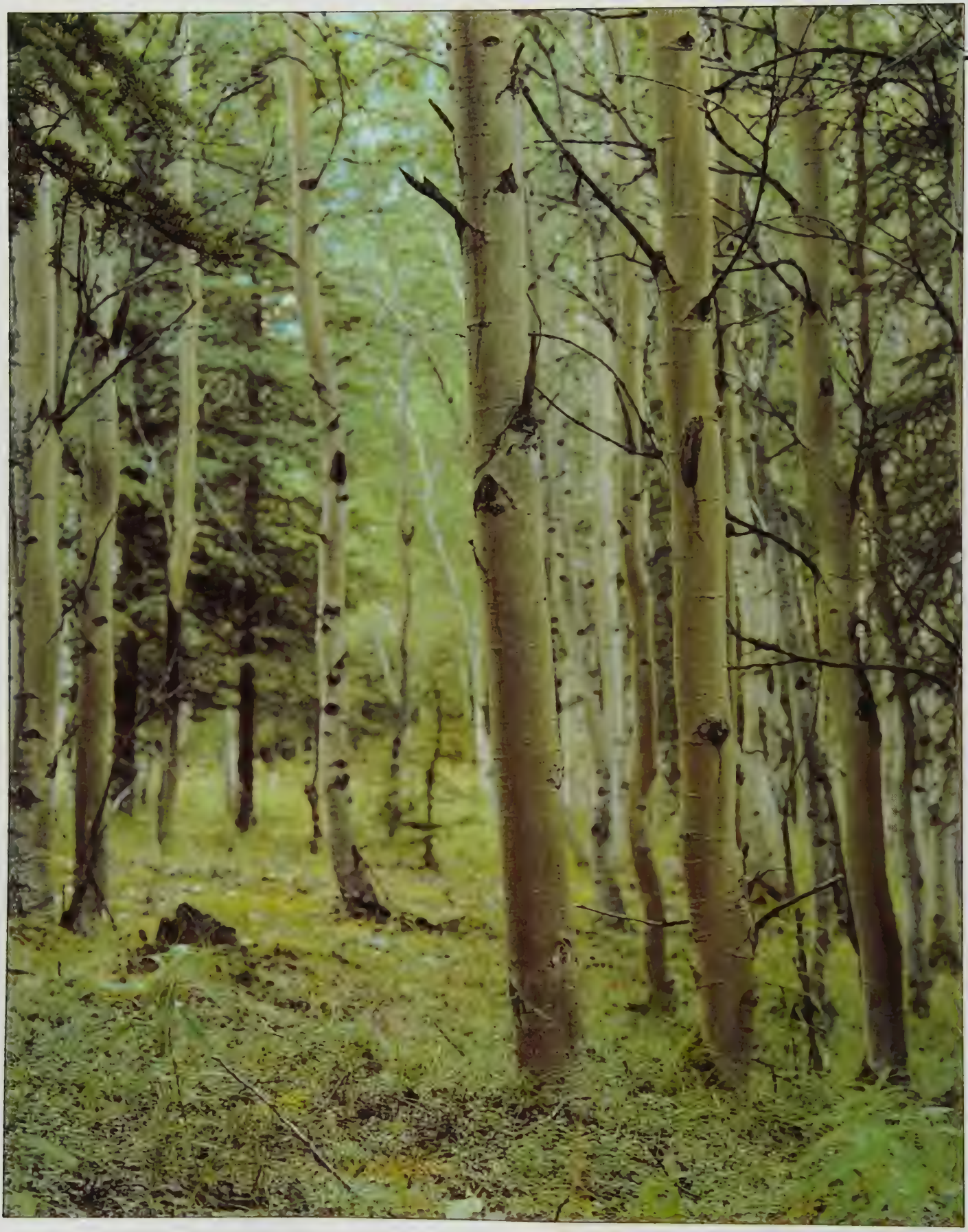
The bright yellow "petals" of the showy flowers are actually sepals. True petals are inconspicuous, and hidden near the stamens. (Norma W. Dudiak)

Pond Lily Popcorn

1/4 cup pond lily seeds
2 tablespoons oil
Melted butter
Salt or soy sauce
Nutritional yeast flakes

Heat oil in heavy cast-iron pot or popcorn popper. When seeds are fully swelled, toss with butter and seasonings. Sprinkle with nutritional yeast for a delicious flavor and hearty dose of B vitamins.

NOTE: If camping, seeds can be wrapped in foil and placed near campfire coals to swell.



Forests and Open Woods

The clearest way into the Universe is through a forest wilderness.

——JOHN MUIR

As our harvest of wood for everything from housing to disposable chopsticks escalates, and as our last old-growth tree stands dwindle, we are increasingly aware of the earth's need for forests. Scientists now recognize the link between worldwide deforestation and the greenhouse effect, and warn that droughts and global eco-crisis will intensify unless a share of the world's forests are protected. Reforestation programs, revised forestry practices acts, and forest ecology programs that emphasize protection of species diversity all point to a worldwide movement toward responsible land stewardship.

Besides trees, forest habitat includes wildflowers and a carpet of ground cover plants such as trailing raspberry, pyrola, and club moss. Fungi such as bear's head (associated with cottonwoods) and hedgehogs (associated with conifers) are also common. It is interesting to note that the "pellets" of woodland rodents are key inoculating agents for mycorrhizal fungi. Mycorrhizal fungi are necessary features of healthy forests, just as healthy forests are essential for planetary well-being. The chain of life into which our lives are woven has never been more evident.

Quaking aspen bark is smooth and yellow-green in hue.

Trees and Shrubs without Berrylike Fruits

Upright female flowers later develop into conelike fruits; drooping male catkins produce pollen.

Summer-harvested leaves can be added to footbaths.

ALDER (*Alnus* species)

OTHER NAMES: mountain alder (*Alnus crispa*); sitka alder (*A. sinuata*, also known as *A. crispa* subspecies *sinuata*); red alder, Oregon alder (*A. oregona*); white alder (*A. rhombifolia*); thinleaf alder (*A. tenuifolia* also known as *A. incana* subspecies *tenuifolia*)

Birch Family (Betulaceae)

Habitat and Range

Alders are common in open woods and in moist areas along creeks and rivers. These large, multiple-trunk shrubs form thickets that are hard to penetrate (except by bears and moose!).

Mountain alder (*A. crispa*) ranges from Alaska and the Yukon south to British Columbia.

Sitka alder (*A. sinuata*) is a common Pacific Northwest species, ranging from western and southern Alaska and the southern Yukon to northern California.

Red or Oregon alder (*A. oregona*) grows from southern British Columbia to California.

White alder (*A. rhombifolia*) ranges from southern British Columbia to California.

Thinleaf alder (*A. tenuifolia*) ranges from central and southern Alaska and the Yukon to central California.

Alder: Smokes Salmon and Soothes Feet

Alder and devil's club, which often share the same habitat in the Pacific Northwest, are probably responsible for more woodland profanity than any other plants. Both form nearly impenetrable thickets, making hiking downright hellish. Yet, in a way, they (together with mosquitoes, black flies, and other winged stingers and biters) are protectors of wilderness areas. They minimize human impact by enthusiastically discouraging entry into the land beyond the trail systems.

Harvest Calendar

Spring: catkins.

Spring to late summer: leaves.

Spring or fall: bark (for medicinal purposes).

Food Use

Alder catkins are said to be a high-protein food source, but most taste buds recognize them as survival fare rather than as a woodland delicacy. They can be added to soups, dried and powdered as a spice, or nibbled raw.

Medicinal Use

Alder's medicinal use has ancient origins. In 1640 Parkinson wrote that the "leaves and bark are cooling and drying. Fresh leaves laid on tumors will dissolve them." In a 1973 study of the properties of *A. oregona* reported in the *Journal of Pharmaceutical Sciences*, scientists verified that the stem-bark of this species contains lupeol and betulin, compounds that suppress tumor activity.

Alder leaves and dried inner bark are bitter; they act on the mucous membranes of the mouth and stomach to stimulate digestion. (See Caution, following.) Alder decoctions are a good camping remedy for stomach ache. In addition, they are astringent and hemostatic, tightening tissues, stopping discharges, and reducing inflammation. Strong alder decoctions can be sipped in emergencies for internal bleeding when no doctor is available (though I'd prefer shepherd's purse or yarrow if present). Some western Indian tribes used to inject alder infusions into the anus for bleeding piles.

Alder's tonic properties make it helpful for strengthening and toning the whole system. For a more palatable tonic tea, blend with nettle leaves, dandelion, and devil's club roots.

Use of alder in Alaska is widespread. Lilian Elvsaas says that when growing up in Port Graham she was given "alder berry" tea for diarrhea. This was prepared by boiling 3 or 4 of the green immature female fruits and taking 2 to 3 tablespoons of the decoction a few times a day. A St. Marys resident recommended a similar brew for tuberculosis. In the Kobuk River area, Eskimos apply alder leaf poultices for insect stings and bites.

For a soothing bath for children with measles or adults with rheumatism, prepare alder vinegar bath additive. Follow procedures for Raspberry Vinegar recipe, but substitute one pound bark. Add 1/4 cup (or more if desired) alder vinegar to the bath water.

Cosmetic Use

Alder leaves are a good ingredient in footbaths for tired and aching feet. I especially like the accompanying herbal blend for a warming foot or body bath after winter sports.

Physical Description

ALDER: *Alnus* species; *a.* Varies from prostrate shrub to 35-foot-high tree in northern latitudes; in mild areas to 70 feet; *b.* Male and female flowers are on the same plant. Male catkins develop first, become long and drooping, and produce pollen; *c.* Female flowers are upright. They develop into green fruits that become woody and conelike at maturity, remaining on the branches all winter; *d.* Alder leaves vary from shiny (*A. crispa* and *A. sinuata*) to dull (*A. oregona*). Leaves have serrated edges.

Skiers' Blend

1/2 cup alder bark and leaves
1/2 cup devil's club bark
1/4 cup mustard leaves
1/4 cup wormwood leaves
Hot water

Place fresh or dried herbs in a cotton or muslin cloth bag. Place herbs and hot water in basin or bathtub. Let herbs steep for 10 to 15 minutes. Insert feet or body. Relax and enjoy!

Historical Use

Boiled-in-water bark produces a dye (the color varies with species) that has been used for coloring hair. Dena'ina Athabascans soak animal skins in the boiled bark scrapings; sometimes they rub the wet bark scrapings directly onto the material to be dyed.

An ancient remedy for ridding your house of fleas is to place dew-laden alder leaves on the floor of your home. The fleas are said to be attracted to the moist alder, so one can easily gather up the flea-covered leaves.

Other

Alder chips provide excellent fuel for smoking and flavoring salmon and trout. A fire from green alder, reports *Alaska's Wilderness Medicines*, is hot enough for welding. I've found thoroughly dried alder among the best firewood available in Alaska.

Alder thrives in poor soil and full sun, and adores freshly bulldozed land. The nitrogen-fixing nodules on alder roots improve soil conditions so that other plants can follow. Spruce, in fact, often springs to life in the moisture and shade of alders. As the conifers grow, they eventually shade out the alders that nurtured them.

On hillsides, alders often cling to the edges of moist ravines; if looking for wilderness water, check near thick alder stands. When climbing or descending steep hills, alders can provide helpful handholds; approach them with a childlike spirit, though, or the tangle of trunks can infuriate you.

Caution

The fresh inner bark is an emetic, often taken to induce vomiting if a poisonous substance has been ingested. Dry the bark unless you specifically want this action!

BIRCH (*Betula* species)

OTHER NAMES: lady birch, lady of the forest, (*Betula* species); paper birch, canoe birch (*B. papyrifera*); Kenai birch, gray birch, (*B. kenaica*); red birch, water birch (*B. occidentalis*); dwarf birch (*B. nana*); shrub birch, scrub birch (*B. glandulosa*)

Birch Family (Betulaceae)

Habitat and Range

Habitat varies from bogs and tundra for small birches to lowlands and subalpine for trees.

Pacific Northwest birches are extremely variable in size and form, ranging from tiny bog shrubs to striking 45-foot trees. Area species include the following:

Paper birch (*B. papyrifera*) ranges from the Brooks Range and the northern Yukon southward to British Columbia, eastern Washington, and northeast Oregon.

Kenai birch (*B. kenaica*) is common in central to south-central Alaska and the central Yukon.

Red birch (*B. occidentalis*) ranges from eastern Alaska, the Yukon, central British Columbia, southward to central California.

Dwarf birch (*B. nana*) is a northern species, ranging from the Arctic to the Alaska Peninsula, and throughout the Yukon.

Shrub birch (*B. glandulosa*) ranges from northern Alaska and the Yukon to extreme northern California.

Birch: Lady of the Forest

Spruce, pine, and oak have always struck me as trees with a male essence, while cottonwood and birch seem more ladylike. Outside my Homer studio stand two ancient trees — a magnificent spruce I call "the grandfather" and his partner, an aged but graceful grandmother birch. Birches have always been dear to my heart. In New England, along country stone-wall-lined lanes, my childhood self marveled at the pliant nature of snow-covered birches. Unlike other trees that rigidly resist the weather, snapping trunks in defiance, the birches yield, yogalike, patiently awaiting the sun's arrival to melt their burden. The psychological

Paper birch is a species with white bark, common throughout the Alaskan Interior and Yukon lowlands. (Norma W. Dudiak)

To tap a birch, a two-inch-deep hole that angles upward slightly is drilled on the sunny side of the tree.

observations we reap from plants have much to teach us. Those with more "practical" spirits, however, can also reap a bounty from birch; the "ladies" offer a wealth of products, ranging from pancake syrup to spices and beer.

Harvest Calendar

Early spring: sap, tender buds, twigs, inner bark, young leaves, catkins. NOTE: When harvesting inner or outer bark, exercise care so that birch is not defaced or destroyed. Campers often rip bark from birch for tinder, causing ugly scars and inviting insect attack. If the tree is girdled (i.e., bark removed from around the tree) and the cambium layer disturbed, the tree will die. Taking bark from a pruned branch creates the least harm to the tree.

Early summer: leaves (for medicinal use).

Physical Description

BIRCH: *Betula* species; *a*. Tree birches to 45 feet; *b*. Shrub birch grows to 7 feet; *c*. Leaf tip of paper birch (*B. papyrifera* subspecies *humilis*) is elongated and tail-like at the tip. Leaves are yellowish-green, especially below. Kenai birch (*B. kenaica*) has egg-shaped leaves with pointed tips. Leaves are dark green, paler below; *d*. Bark of paper birch is white; Kenai birch has gray bark. Red birch (*B. occidentalis*) has reddish-brown bark; *e*. Catkins of paper birch are shorter and wider than those of Kenai birch; *f*. Both dwarf and shrub birches have leaves with rounded tips. Dwarf birch (*B. nana* subspecies *exilis*) is a dwarf, decumbent shrub. Shrub birch (*B. glandulosa*) is a taller, upright shrub. Both inhabit bogs and commonly hybridize where ranges overlap.

Food Use

Birch sap is a savory and vitamin-rich beverage. Those in remote areas who depend on creeks for drinking water find the clear, slightly sweet fluids a welcome substitute during spring breakup.

To tap birch trees, drill a one-half-inch hole, two inches deep, at a slight upward angle. Make your hole on the sunny side of a birch that is at least nine inches in diameter. (The tree should be vigorously healthy, with good solid wood.) The best time for tapping is in early spring, before leaves unfurl, when the days are warm and nights cool. You may want to try some sample taps so you don't miss the peak of production. The early sap is the highest in sugar content and yields the best products. (On the Kenai Peninsula of Alaska, tapping often commences in mid-April. It could begin considerably earlier in milder areas.)

A tap for directing the flow of birch sap to your bucket can be purchased commercially or made by hollowing seven- or eight-inch-long segments of elder stems. Elder pith is soft and pushes out easily, leaving a hollow stem ideal for tapping; remember, this pith is toxic and must be throughly removed. (Some foragers boil their elder taps before use.)

Once your hole is drilled and tap prepared (taper the end that will be inserted into the tree and cut a notch on the outside to hold the handle of the bucket), just place the tap in the hole. Tie a plastic milk jug or five-gallon bucket onto the tap.

Check sap buckets two to three times daily. Sap production can range from one gallon (or less) per tree up to ten gallons daily at the height of the season. Taps need to be examined occasionally; after a week or so, holes are often clogged by the coagulating sap, so that the hole and tap must be cleaned out. (A new hole could also be drilled, but I try to minimize impact on

the tree whenever possible. When through tapping, I plug the hole with sphagnum moss to seal the tree and protect it from injury.)

Sap should be filtered to remove any insects or twigs. When collecting sap for making syrup, vinegar, or alcoholic beverages, be certain to keep the fluids refrigerated or frozen. Process as soon as possible. Sap sours rather quickly in warmth or rain.

If you've lived in maple syrup country, you may or may not find birch syrup a satisfying substitute. Birch syrup flavor reminds me of molasses (a product I like) but instead of the thirty- to forty-gallon sap-to-syrup ratio of maple, birch yields one gallon of syrup to every eighty to one hundred gallons of sap. Unless you have an abundance of time and fuel, you may wish to settle for a pint or quart of birch syrup. Using an outdoor evaporator for processing the syrup is highly recommended; if you've ever steamed a stamp from a letter, you have a good idea of what indoor sap-making can do to wallpaper and paint. An evaporator can be easily constructed from a fifty-five-gallon wood-burning drum and a large top-of-the-stove cooking vessel.

In *Cooking Alaskan*, Florence Thornton of Rabbit Creek, Alaska, recommends constant stirring as soon as the sap begins to thicken. She says it takes about twelve hours to boil twenty-five gallons of sap to one quart syrup.

Fresh undiluted sap can be processed into vinegar or birch beer. Birch twigs, steeped in hot sap, yield a spicy after-dinner brew. Alaskan homesteader Yule Kilcher allows sap to stand uncovered until fermentation occurs; he then filters the sap, adds a pinch of sugar and yeast, corks and ages the brew, and serves it as "birch champagne."

For spring salads, add young birch leaves and catkins (from any species) with other milder greens and toss with your favorite dressing. Birch buds and twigs, gathered from the small or tall birches, can be tied in a muslin bag and boiled in vegetable and meat stews as a spice.

The inner bark (cambium) of the tree-sized birches is another food source; it can be used year-round for emergencies, but is tastiest in spring when the sap is running. It may be nibbled raw, shredded and boiled like noodles, added to soups, or dried and ground as a flour substitute. It has been a common famine food. During the Civil War, the path of retreating Confederate soldiers could be traced by the birch bark scars in the mountains of Virginia, where the cambium had been removed and eaten.

Birch Syrup

Contributed by Deiv Rector of Homer, Alaska

Filter sap through cheesecloth or linen. Place in large cooking pot on outdoor wood stove and bring to rolling boil. As soon as the sap begins to darken in color, watch it carefully because burning can easily occur. The sap may be transferred at this point to the rear of an indoor wood stove and heated slowly overnight. If you continue on a hot fire, watch the mixture closely. As soon as sap is barely thick, remove from heat. Bottle in clean jars and keep in a cool area. Use as pancake syrup or flavoring in breads and baked goods.

Medicinal Use

Old-time prospectors, homesteaders, and natives tout birch sap as a healthful spring drink. Sap is also used as a gargle for mouth sores and as an external wash for skin ailments. *Alaska's Wilderness Medicines* reports the sap is bottled and sold in Russia as a tonic medicine.

Chemically, birch contains significant amounts of methyl salicylate (the compound closely related to aspirin) and ten percent to fourteen percent betulin. The bark and leaves are often used in teas for headache and rheumatic pain; for these purposes, I like blending birch with willow, poplar, and nettle. For a calming tea that eases insomnia, I mix birch with pineapple weed flowers and valerian.

Birch leaf infusions are often recommended to those with urinary problems and kidney stones. Herbalists have used decoctions of the astringent bark internally for fevers and diarrhea, and externally for boils, psoriasis, and vaginal douches for troublesome discharges.

Add birch buds and leaves to salves for

persistent skin afflictions such as ringworm. Blend leaves and bark in liniments and massage oils for sore or strained muscles.

Cosmetic Use

Birch twig facial steams are reported to be therapeutic for clogged sinuses; as an added bonus, the fragrant steam helps clear the complexion of acne. If you're troubled by skin eruptions, add birch decoctions to the bath water. Dried, finely powdered birch inner bark is a good addition to bath powders for chafed skin. Gargle with birch tea to freshen the breath.

In Germany and Austria, birch leaf extract is a common ingredient in commercial hair preparations; at home you can prepare birch tea hair rinse for scalp infections and dandruff. The Chinese use birch roots and bark decoctions as dye for hair and beards.

Historical Use

Historians have several notions of how the common name "birch" originated. *The Herb Book* says it may originate from the Indian *bharg* (shining) or the Latin *batuere* (to strike). Roman soldiers once carried an ax encased in a birch rod bundle to symbolize the state's power to flog the unruly with their birch branches, or end their lives with an ax. Most likely "birch" derives from the Sanskrit *bhurga*, meaning a tree whose bark is used for writing.

Birch scrolls that date back to the sixteenth century have been found that are still legible. Even after the invention of commercial paper, bark scrolls, because of their durability, remained the preferred material for important records such as family histories.

Besides paper, birch bark has been used for canoes, baby cradles, baskets, and camping dishes. Birch brooms and whisks were once common tools for cleaning dwellings and beating eggs. Today birch wood is used commercially in products that range from clothespins to kitchen cabinets.

Other

In Russia, extracting oil of birch tar is a major industry. This product repels insects and adds durability to leather. In *A Modern Herbal*, Mrs. Grieve writes ". . . that books bound in russia leather are not liable to become mouldy."

Oil of wintergreen is another commercial byproduct. Curiously, certain birch species yield an oil virtually identical in composition to that produced by the wintergreen plant, *Gaultheria procumbens*. When not produced synthetically, this substance is most frequently distilled from the twigs and bark of *Betula lenta*. It is used to flavor toothpaste, candies, and medicines.

In Alaska, birch and spruce are the two dominant trees of the Interior. Birch bark, which ignites readily even when wet, is a superior tinder for emergencies, and birch wood produces a hot, long-lasting fire. The bark, fashioned into lean-tos with spruce, provides waterproof shelters for campers in need. On pioneer cabins, the bark was often used as sheeting under sod. Birch switches have long been popular in steam rooms to promote circulation. Sauna enthusiast Ed Berg says "the Finns gather leafy branches and dry them, wetting them down at sauna time to restore leaf flexibility."

Besides being an aesthetic addition to home gardens, birch is an excellent companion plant. Use it on the outskirts of your compost pile to encourage fermentation; compost action is believed to be stimulated by substances secreted by birch roots. According to *Companion Plants and How to Use Them*, soil from the vicinity of birches helps heal ailing plants and restores fertility to barren or overacid soils.

Introducing birches has the added benefit of attracting birds. Birch seeds are a major food source for redpolls and other flocking birds that overwinter in the North.

The Complete Book of Health Plants describes birch symbolism as ". . . good fortune and kindness, and the return of spring." After a long winter, there's hardly a more welcome greeting than the pulsing of the birch sap. With a stethoscope, it's said you can hear the pumping of the tree's fluids pounding like a human heartbeat. I hear this as the "cymbal of spring!"

Caution

Prolonged boiling in closed containers could concentrate the salicylic acid of birch and spark problems with those hypersensitive to aspirin. Steeped gently as a tea, the herb is generally regarded as quite safe.

HEMLOCK (*Tsuga* species)

OTHER NAMES: western hemlock, Pacific hemlock, west coast hemlock, Alaska pine, hemlock spruce (*T. heterophylla*); mountain hemlock, alpine hemlock, black hemlock (*T. Mertensiana*)

Pine Family (Pinaceae)

Mountain hemlock cones are purplish when immature. Needles are flattened on top, angled below. (Jon R. Nickles)

Habitat and Range

Hemlocks range from sea level to alpine. At higher elevations, mountain hemlock becomes a prostrate shrub. It grows in muskegs as well as on mountain slopes.

Both western and mountain hemlock range from south-central and southeastern Alaska southward to California.

Hemlock: Tree for Tea and Timber

Hemlock — the tree — is no relation to the poison hemlock of marsh and meadow. Their only common denominator is a common name. The toxic hemlocks are members of the parsley family; the evergreen hemlocks are members of the pine family.

Western hemlock is the primary pulp species in the Pacific Northwest. In addition, both hemlock species yield lumber for cabinetry, crates, mine timbers, railroad ties, and other construction. In Alaska, the hemlocks supposedly soared to popularity after being dubbed "Alaska pine."

Harvest Calendar

Spring: tips of branches and inner bark. NOTE: For emergency use, these can be gathered in any season.

Food Use

A handful of hemlock twigs steeped in hot water makes a pleasant vitamin C-rich beverage. This brew has kept many an explorer free of scurvy. I especially like Spice Tea, a spicy hemlock blend for blustery camping trips, as well as quiet evenings by the fire.

The inner bark, gathered in spring as the sap runs, is a favorite of various native groups. The cambium can be eaten raw or cooked, blended with sap and pressed into cakes, boiled like noodles, cooked with berries, or dried as a flour substitute. Members of the Gitksan tribe in British Columbia baked it in fire pits lined with moss and swamp cabbage leaves.

Medicinal Use

Tea brewed from inner bark or twigs is a traditional treatment for colds, flu, and fevers. *Earth Medicine, Earth Foods* reports that Montagnais tribes added club moss to hemlock tea "... to treat the fever and loss of strength associated with influenzalike disorders."

Herbalists ancient and modern have recommended hemlock infusions for kidney and bladder ailments. Decoctions of the twigs and cambium have been used as external washes for skin sores and gargles for sore throat.

Hemlock pitch was listed as an official remedy in the *United States Pharmacopoeia* from 1831 to 1894. It was applied externally as a counterirritant for arthritic pain.

Cosmetic Use

Powdered hemlock cambium is a good ingredient in foot powder. It helps eliminate foot odor.

Hemlock decoctions are a pleasant

Spice Tea

Gather and dry:
2 cups hemlock tips
2 cups spruce tips
1 cup chopped inner bark of hemlock, spruce, or birch (harvest from a pruned branch)
1 cup birch leaves
1 cup sweet gale leaves and twigs
1/2 cup devil's club root bark
1/4 cup Labrador tea leaves

Mix with the following ingredients (available from a natural foods store or herb supplier):
1 cup orange peel
1 cup sarsaparilla root
1 cup star anise
3/4 cup chopped cinnamon stick
1/2 cup licorice root
1/4 cup whole cloves

Blend all ingredients well. Store in double paper bags or in a glass jar in a dark closet. For gift-giving, place in plastic bags wrapped in colorful fabric. Use 1 heaping tablespoon herb mixture and 1 cup boiling water per serving. Steep in covered teapot 5 minutes. Strain and serve.

addition to beautifying baths. Besides soothing the skin, hemlock calms the nerves and relieves tensions. If you're troubled by insomnia, try a relaxing hemlock bath before bedtime.

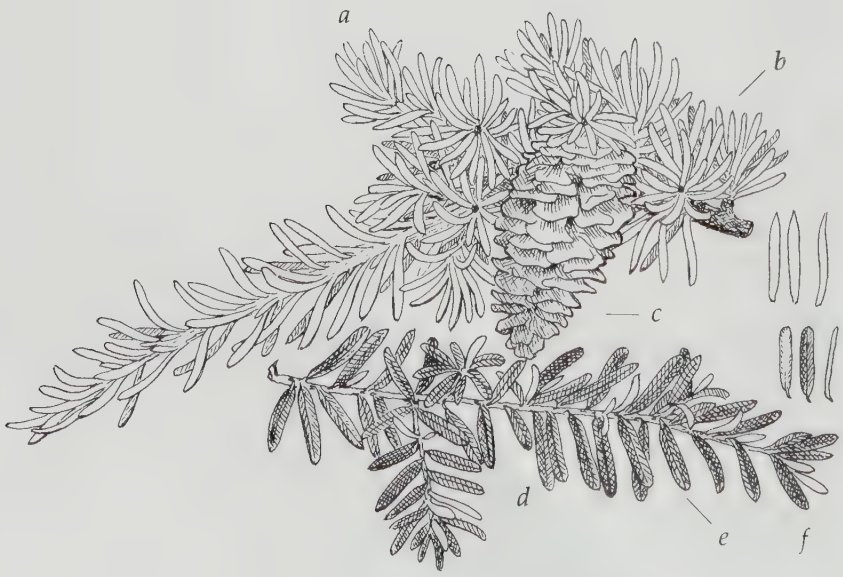
Historical Use

According to *The Herb Book,* boiling hemlock bark in water yields substantial tannic acid. "When a prepared animal skin or hide is soaked in a tannic acid solution," says Lust, "the tannin combines with the protein of the hide to form decay resistant leather." Samples of 3,000-year-old bark-tanned Egyptian leather have been found in excellent condition. *Tom Brown's Field Guide to Wilderness Survival* relates that boiled hemlock bark can also be used as a red-brown dye and wood preservative.

Other

Distilled hemlock oil is an ingredient in veterinary liniments. It can also be used in human liniments and massage oils for sore muscles but must be diluted — the pure oil is extremely irritating to the skin.

On camping trips, you can start your fire with hemlock chips, sip hemlock tea, and sleep in comfort in your hemlock bed. The boughs are also useful for covering an emergency shelter.



Physical Description
HEMLOCK: *Tsuga* species; *a.* Mountain hemlock, *T. Mertensiana,* grows to 100 feet high, but Alaskan specimens are often dwarfed, especially at higher elevations; *b.* Mountain hemlock needles are flattened above, rounded or angled below; *c. T. Mertensiana* cones grow to 2 1/2 inches long and 3/4 inch wide. Cones are purplish when young and turn brown with age; *d.* Western hemlock, *T. heterophylla,* grows to 150 feet; *e.* Western hemlock needles are flat with round tips, glossy green above with 2 white bands below; *f. T. heterophylla* cones grow to 1 inch long.

POPLAR AND ASPEN (*Populus species*)

OTHER NAMES: balsam poplar, cottonwood, balm of Gilead *(P. balsamifera)*; western balsam poplar, black cottonwood *(P. trichocarpa)*; aspen poplar, trembling aspen or quaking aspen, American aspen *(P. tremuloides)*

Willow Family (Salicaceae)

Habitat and Range

Balsam poplars are abundant in river valleys, flood plains, and open forests. Quaking aspens favor south slopes, open woods, and banks of creeks.

P. balsamifera, commonly called balsam poplar or cottonwood, ranges from the Alaskan Brooks Range eastward through the Yukon and southward to Kodiak Island, the Kenai Peninsula, and northern British Columbia.

P. trichocarpa, the western balsam poplar, ranges from Kodiak Island, the Kenai Peninsula, and Alaska Panhandle southward to California.

P. tremuloides, the trembling aspen, is the most widely distributed tree species in North America. In the Pacific Northwest, it ranges from the Brooks Range of Alaska and the northern Yukon southward to California.

Poplar: Source of Balm of Gilead

Poplar is the tree most in need of a press agent. "Not too much good can be said of the poplars," states one wild plant author, "beyond the fact that they provide material for the manufacture of paper." Contrary to popular opinion, *Populus* species are far from the "most useless of trees." Though it is true their wood is far from choice as fuel, the trees offer soothing salves and emergency foods for foragers, as well as materials for carvings and kitchen cosmetics.

Harvest Calendar

Winter to early spring: buds of *P. balsamifera*. NOTE: Buds are easiest to collect when temperatures are around freezing. When warm, buds are exceedingly sticky and many of the valuable resins are lost. Buds must be dried for winter use or molding will occur.

Buds of balsam poplar are traditional in skin salves.

Bark of balsam poplar becomes deeply furrowed with age.

Spring: inner and outer bark of *Populus* species; catkins.

Summer: leaves of *Populus* species.

Food Use

Catkins of balsam poplar and quaking aspen, eaten raw, are a source of vitamin C. Catkins can also be added to soups and stews. The bitter flavors, however, force me to qualify them as survival fare.

The sweet spring cambium, the thin layer between the outer bark and the inner sapwood, is a nourishing food. Various native groups scrape the inner bark from the tree with a knife and dip it in grease. Cambium may also be boiled, or dried and ground as a flour substitute. Poplar bread was often eaten during famines. For survival purposes, this inner bark may be collected in any season; it is most palatable and easiest to gather when the spring sap is flowing. To minimize impact on the tree, collect from a pruned branch.

Medicinal Use

My favorite use for balsam poplar is to make the famous skin salve called Balm of Gilead from its fragrant buds.

Use Balm of Gilead liberally to treat piles, burns, cuts, diaper rash, and assorted skin irritations. For nasal congestion, place a dab of salve inside the nostrils or boil one tablespoon of salve in water and inhale the vapors. Spread the salve on horse saddle sores and animal wounds. (NOTE: Buds are frequently added to herbal salves; besides being a healing agent, their antioxidant properties help prevent rancidity.)

Balsam poplar and quaking aspen are in the willow family. Like *Salix* species, *Populus* contain the glycosides salicin and populin. These aspirinlike compounds are effective in reducing pain, fever, and inflammation. *Populus* bark contains the highest concentration of these compounds and is frequently used in decoctions and tinctures for arthritic pain, urinary tract inflammations, diarrhea, and stomach upset.

Medicinal Plants of the Mountain West recommends external applications of fresh or dry *Populus* buds and bark in "... fomentations or poultices for muscle aches, sprains, or swollen joints." *Herbal Tinctures in Clinical Practice* says bud tinctures serve "... topically as a counter-irritant-analgesic for joint and muscle pain, similar to methyl salicylate but without the potential for absorption toxicity of the latter." The antiseptic bark is also used in liniments for cuts and scratches.

The leaves, though less potent, do contain salicin and can be steeped in water as a wilderness tea for headache. Bud teas and tinctures are expectorant (promote discharge of mucus) and are reported helpful for colds and bronchitis.

Cosmetic Use

I like indulging in a *Populus* footbath after a strenuous hike. Place leaves and bark from a pruned branch in a tub and cover with hot water. Add feet and enjoy!

Those with acne and oily skin favor balsam poplar buds simmered in water as a complexion-clearing facial steam. At one time the buds, steeped in butter, were used by Chinese peasants to make their hair shiny.

Historical Use

Poplar buds and bark were official remedies listed in the *United States Pharmacopoeia* from 1895 to 1965. Their medicinal use dates to the second century A.D., when Galen prescribed the buds to reduce inflammation.

The "balm of Gilead" referred to in the

Balm of Gilead

1 cup balsam poplar buds
1 1/2 cups lard
1 dropper liquid vitamin E

Place buds and lard in top of double boiler. Boil water in lower pan. Heat (covered) for 1 to 2 hours, then strain through muslin cloth. Squeeze well to extract as much oil as possible. Discard buds. Return oil to pan and add vitamin E; stir well. Pour into wide-mouth containers. When cool, cap containers. (NOTE: If desired, this may be made with olive oil and thickened with beeswax.)

Bible is *Commiphora meccanensis*, a Mediterranean tree that exudes a healing resin. The Old Testament, however, does refer to *Populus* in the tale of Jacob (Genesis 30:37-43). Since Jacob's father-in-law had promised him all the striped goats and sheep born in the herd, Jacob wove poplar with other branches in a striped arrangement and used this as a visual aid to encourage the flock to produce striped offspring.

When Hercules descended to Hades to rescue the three-headed Cerberus, he was wearing a crown of poplar leaves. The fumes of that hellish place are believed to be the cause of cottonwood leaves' coloration — smoky gray on the undersides and dark green on top.

The thin, flat leafstems of quaking aspen (set at right angles to the leaf blades) cause aspen leaves to turn freely in the slightest breeze. This enables the tree to receive sun on both sides of its leaves. According to legend, however, this "trembling" is caused by the tree's remembrance of its role as lumber in the crucifix of Christ.

Other

Populus wood is mainly used for making crates, paper, and small utensils; occasionally dugout canoes and cabins are built with cottonwood logs. The lumber, however, has a beautiful grain and is well-suited (when properly dried) for the finest woodworking.

Dena'ina Athabascans smoke fish with cottonwood and use the ashes to wash clothes and floors. Boyd Shaffer of Soldotna, Alaska, claims that 1 teaspoon of cottonwood ashes effectively replaces 1/2 teaspoon of baking soda in recipes.

Populus catkins, buds, leaves, and shoots are browse for moose and rabbits. *American Medicinal Plants* notes that quaking aspen shoots and leaves are gathered in Sweden and fed to domestic sheep in winter. Trappers often use quaking aspen as bait in beaver sets. Canadian herbalist Don Ollsin says that the bees chew the resins of poplar and other trees, mix them with their enzymes, and regurgitate as bee glue.

The bark of older balsam poplar trees is easy to carve and makes attractive items with a beautiful grain. Eskimos carve bark into

Physical Description

BALSAM POPLAR: *Populus balsamifera* and *Populus trichocarpa; a. P. balsamifera* is a medium-sized tree, averaging 30 to 50 feet. *P. trichocarpa* grows to 100 feet; *b.* Leaves smooth, dark green above and paler underneath. Leaves turn golden in fall before shedding; *c.* Leaf stalks are round; *d.* Winter buds are large, pointed, resinous, and fragrant; *e.* Male and female flowers grow in catkins on separate trees. Male flowers have 20 to 30 reddish-purple stamens. Female flowers have 2 wavy broad stigmas; *f.* Fruit is a capsule. *P. balsamifera* has smooth capsules with 2 parts. *P. trichocarpa* has hairy capsules with 3 parts; *g.* Bark is gray-brown with deep furrows in old trees.

QUAKING ASPEN: *Populus tremuloides; h.* Mature trees, generally 20 feet high, occasionally reach 40 feet; *i.* Leaf blades nearly round, shiny above, lighter below; *j.* Leaf stalks are flat and set at right angles to the leaf blade. Leaves flutter in slightest breeze; *k.* Buds are not resinous; *l.* Bark is smooth, yellow-green in hue; *m.* Flower clusters are catkins. Male and female catkins are on separate trees. Flowers appear early (generally May) before leaves fully unfurl. Fruiting capsules are smooth; *n.* Leaves turn golden in autumn before shedding.

Leafstems of aspen are thin and set at right angles to the leaf, causing the leaves to turn freely (or "tremble") in the wind.

fishing floats and sun goggles. Balsam poplar wood is also popular as a carving medium; in the Southwestern United States, Navajo and Hopi fashion kachina dolls from local species.

I always add balsam poplar twigs to my early spring vase of pussy willows; as the leaves unfurl, a delightful *eau de spring* perfume is released. An added benefit is that poplar branches, placed in water, produce copious roots—giving you attractive, fast-growing trees of easy cultivation. Keep in mind that roots grow so enthusiastically they may eventually block water drains or heave sidewalks; plant where trees will not cause disturbances.

Because *Populus* branches produce rooting hormones, they are often placed in vases with other plants. They act much like commercial rooting products and are free to foragers. The delightful fragrance of spring balsam poplar is extracted commercially through distillation and used to scent cosmetics and medicines. The Lombardy poplar (*P. nigra*), is one of the species often introduced as an ornamental in the Pacific Northwest.

Botanically, the *Populus* genus hybridizes readily. I've heard its genealogy compared to an exhausting novel that describes the alliances of several generations established in international capitals. The forager, fortunately, need not unravel the family tree, nor painstakingly differentiate the hybrids. The genus as a whole is safe, and properties are similar. Perhaps, with all these benefits, the *Populus* genus will start being appreciated for what its botanical name describes it to be; that is, "the people's tree!"

Caution

Populus bark contains the glycosides salicin and populin. Though poisonings are not reported from ingestion of these aspirinlike compounds, ingestion of large amounts over long periods could be hazardous. *Herbal Medications* reports that "some individuals are sensitive to the pollen of these trees and develop allergies when gathering or handling certain plant parts."

SPRUCE (*Picea* species)

OTHER NAMES: white spruce, cat spruce, Canadian spruce (*P. glauca*); Sitka spruce, tideland spruce, coast spruce (*P. sitchensis*); black spruce, bog spruce, water spruce, swamp spruce (*P. mariana*); Engelmann spruce (*P. Engelmannii*); weeping spruce (*P. Breweriana*); blue spruce (*P. pungens*).

Pine Family (Pinaceae)

Habitat and Range

White spruce often grows intermixed with birch. Sitka is common in coastal forests. Black spruce, which best tolerates wet conditions, is often found in muskegs. Engelmann spruce favors moist mountain slopes.

White spruce (*P. glauca*) is the dominant tree of the Alaskan Interior's spruce-birch forest. This species grows as far north as the Brooks Range and as far south as British Columbia.

Sitka spruce (*P. sitchensis*) ranges from Cook Inlet and Kodiak Island, Alaska, south to California. Sitka is the most salt tolerant of the spruce species and is common in coastal areas.

Black spruce (*P. mariana*) is a smaller, less economically important species, ranging from northern Alaska and the Yukon southward to British Columbia.

Engelmann spruce (*P. Engelmannii*) is an important tree, ranging from central British Columbia to northern California.

Other Pacific Northwest species include weeping spruce (*P. Breweriana*) of southern Oregon and northern California, and blue spruce (*P. pungens*), often introduced for ornamental purposes.

Spruce: Beverage and Bath Additive

Sitting here in my spruce cabin at my spruce desk on my spruce stool, as I sip spruce tea and am warmed by spruce wood, I am infinitely grateful to this versatile conifer. Partnership between spruce, wildlife, fungi, and humans is a complex one. We are now beginning to understand and appreciate the cooperative interrelationships between life forms and forests.

White and Sitka spruce are Alaska's most economically important species. The former is often utilized in log building and for general construction. The latter is prized for building boats, airplanes, and musical instruments as well as for making food containers and newsprint. Though black spruce can grow to be a handsome tree that yields excellent lumber, these trees often grow in less than optimal conditions. Black spruce in bogs tend to be dwarfed specimens; for many northerners they serve only as firewood.

Late spring is the season for gathering the bright new growth at the end of spruce branches. (Norma W. Dudiak)

Harvest Calendar

Spring: spruce tips, inner bark, reddish male buds.

Spring to winter: spruce boughs, roots, hardened resins.

Food Use

Spruce tip tea is a family favorite. To prepare, just gather a generous handful of the vivid green spring growth from the ends of spruce branches (any species) and steep in a covered teapot with hot water. Sweeten with honey, orange slices, cinnamon and cloves, or a nip of

brandy. Though spring yields the most flavorful tea, I've made a very satisfactory brew on skiing excursions by gathering tips of the branches of young trees. You can also dry the prime spring growth for year-round use.

Spruce-tip jelly is another product worth stocking in your cupboard. Serve with lamb or venison, or use on morning muffins.

The young, red male spruce buds have a zesty flavor; add a couple of chopped buds to salad, or use as a spice for meat. Another seasoning, suggested in *Field Guide to Edible Wild Plants*, is the ground immature cones. The soft centers of young cones can be roasted in campfire coals until syrupy and then eaten. Seeds from older cones can be eaten raw or roasted, but their small size hardly makes the effort worthwhile, except to squirrels.

The cambium, or inner bark, of spruce is a traditional survival food and native food source. It is best in early spring but may be used for emergencies at any time of year. This thin layer may be eaten raw, boiled like noodles, or dried and ground into flour. Indians mashed it into a pulp and dried it into cakes; on the trail they would boil and eat it. Cambium may also be dried and used as an ingredient in tea. To prevent injuring the tree, harvest inner bark only from pruned branches or from trees that will be used for firewood.

Medicinal Use

Spruce tea, besides tasting delicious, is an excellent source of vitamin C. On Captain Cook's expeditions, spruce beer was rationed to the crew to ward off scurvy. (This same brew was highly popular in pubs in the 1800s, but not for nutritional reasons!)

Spruce syrup and spruce tea are recommended for coughs, colds and congestion, and for urinary problems. Inhaling the vapor of boiled needles is reportedly helpful for bronchitis.

Spruce sap has been used since ancient times for healing burns and sores. The pitch has been employed for medicinal plasters for backache and headache, and to cover wounds and protect them from infection.

Externally, spruce oil is often recommended for rheumatic and arthritic pain. (See Caution, following.)

Cosmetic Use

After a long and strenuous hike, pamper your feet with a spruce footbath. Follow with powder made by grinding the dried inner bark.

For a relaxing bath to soothe sore muscles and dry or irritated skin, try the accompanying recipe.

Spruce oil is wonderful in bath and massage oils. Commercially, spruce is used in making soaps, fresheners, and cleaning products. For a simple breath freshener, gargle with spruce tea.

Historical Use

Spruce has been used creatively by various peoples throughout history. Spruce pitch was used for covering wounds and caulking shelters, roots for weaving baskets and making snares, ribs for building boats, boughs for making mattresses, and spruce lumber for fashioning sleds and tools. During epidemics, spruce boughs were burned as incense to ward off disease.

For Alaskan natives, spruce was a plant of supreme importance. Dena'ina Athabascans regarded spruce as the most important tree of the forest. Koyukon Athabascans, says anthropologist Richard Nelson, thought white spruce to be "... invested with a potent spirit, like that of the most powerful animals" but differing in that it had "... mostly benign effects on humans." Haida Indians believed that cakes made of

Spruce Bath Additive

1 gallon fresh spruce branches, chopped fine
2 gallons water

Boil spruce and water for 1 hour. Strain. Add fluids to bath water. Relax and enjoy. If you prefer, you can heat the mixture on a wood stove throughout the day. This scents the air and helps clear clogged sinuses. Strain at night, adding the fluids to your bedtime bath.

spruce cambium and highbush cranberries were food of the Great Spirits.

During World War II the British imported Canadian spruce, but for less spiritual purposes. Spruce was a primary wood for constructing mosquito bombers and other light combat planes; today spruce is used for making pleasure gliders. Modern boatbuilders also utilize lumber and bracing in their skiffs.

Chewing gum is another popular spruce product. According to D. Kilton Andrew, Jr., of L.L. Bean of Freeport, Maine, professional athletes favor spruce gum because "it keeps the mouth moist and has none of the drawbacks of chewing tobacco."

Other

Spruce Christmas trees and wreaths of boughs or roots are traditional holiday decorations. Natural ornaments can be fashioned from spruce cones and rose hips.

In the home sauna, spruce is excellent for placing on hot rocks. When splashed with water, the aromatic and antiseptic steam is released.

To prevent competition for vital elements, spruce roots release an acid that prevents plants from encroaching. In addition, their thick evergreen branches effectively shade out many plants. "The largest old growth trees in southeast Alaska," reports *Alaska Trees and Shrubs*, "have trunk diameters exceeding 8 feet (2.4 m.) and ages of 500-750 years or more." Though lacking a large diversity of plants, such climax spruce forests serve a number of valued functions. For me, the cathedral atmosphere of the grandfather forests uplifts my spirits and restores my energies. For deer, owls, eagles, and other wildlife, the old growth provides essential winter cover and habitat. Its value as "wilderness" is one to bear in mind as demands of the lumber industry increase.

Caution

Pure spruce oil (obtained by distillation) can be irritating to the skin. It should always be blended with other oils.

Physical Description

SPRUCE: *Picea* species; *a*. Sitka spruce, the most widely distributed spruce in the Pacific Northwest, grows to 160 feet (sometimes more); *b*. Cones of Sitka spruce are thin and papery with fluted edges. Engelmann spruce has chestnut brown cones; scales are thin and bend easily; *c*. Needles of Sitka are flattened and do NOT roll between the fingers easily; *d*. White spruce is generally 40 to 70 feet, but alpine specimens may be prostrate shrubs; *e*. Scales of white spruce cones are thin with smooth, rounded edges; *f*. White spruce needles are 4-angled and roll easily between the fingers. Twigs are smooth; *g*. Black spruce can grow to 30 feet in good soil. However, it tolerates the wettest growing conditions and is often found in muskegs where its growth is stunted; *h*. Young black spruce twigs have dense orange fuzz; *i*. Black spruce has 4-angled needles that roll easily between the fingers; *j*. Cones are small and persist on the trees. Black spruce bark tends to be shaggy.

Willow flowers are on separate plants.

WILLOW (*Salix* species)

OTHER NAMES: osier, pussy willow (*Salix* species)

Willow Family (Salicaceae)

Habitat and Range

Willow habitat varies from streams and riverbanks, open forests, moist meadows, and river flats to stony tundra and seashores. Numerous *Salix* species range throughout the Pacific Northwest. In Alaska alone, there are more than four dozen species. Willows sprout readily, hybridize frequently, and grow in all soils, and on all continents except Australia.

Willow: The Aspirin Alternative

The botanical name, *Salix*, is classical Latin for willow, indicating this plant's long association with man. Willow is mentioned in the Old Testament in Ezekiel 17:5-6 — "Then he took some seed of the land, and planted it in a seedbed; a shoot by plentiful waters, like a willow he placed it, to sprout and grow up like a vine. . . ." A 4,000-year-old Sumerian papyrus documents use of this pain-relieving herb by ancient peoples. Perhaps Roman leaders, worried about a coming battle, sipped willow tea to relieve headache; this "natural aspirin" is equally suitable for modern business stress.

Harvest Calendar

Early spring: bark and shoots. NOTE: Though bark is generally harvested for medicinal purposes in spring when the sap is

Physical Description

WILLOW: *Salix* species; *a*. Willows range from tiny prostrate shrubs a few inches high to erect 30-foot trees; *b*. Male and female flower clusters (catkins) are on separate plants. As spring unfolds, the male stamens turn golden and release clouds of pollen; *c*. Ovaries are evident on female catkins; *d*. Leaves are variable in shape, from small and round to long, large, and narrow. Some species have leaves that are smooth on both sides; others have leaves with a felty underside; *e*. *S. pulchra* grows to 9 feet. It is an erect shrub or small tree with young capsules that have short hairs (pubescence). Leaves are variable in shape and mostly smooth beneath; catkins lack stalks and have modified leaves (stipules) at their base that are persistent and prominent; *f*. *S. alaxensis* grows to 20 feet. Its leaves are felty underneath. Catkins are stout and sessile (lack a stalk); they appear at the same time as the leaves. Young twigs have a woolly coating; *g*. Consult a local flora for a complete description of species.

running, for wilderness emergencies it can be gathered in any season. To have "prime" willow on hand at all times, tincture the spring bark.

Spring to early summer: young leaves.

Food Use

Though all willows are "edible," not all are palatable. Inupiat natives favor the young spring leaves of the common *S. pulchra*. This species, common in Alaska and Siberia, has leaves that are smooth on both sides, catkins that are sessile and erect, and blackish scales. The young leaves are harvested when one-half to one and one-half inches long, and are preserved in seal oil for year-round use.

The peeled spring shoots and juicy inner bark of the Alaskan or felt-leaf willow (*S. alaxensis*) is also popular. As the felt-leaf name indicates, leaves are woolly on the underside. Catkins are erect and appear simultaneously with the leaves. Anore Jones in *Nauriat Niñaqtuat* says the inner bark of this species is sweet and ". . . tastes like watermelon or cucumber."

NOTE: For positive willow identification, one needs a local flora, hand lens, and the flowering shrub. All species are safe, so taste can also be a guiding factor. Some species taste strong at first and then leave a refreshing flavor. But many never improve with aftertaste! Since willow leaves are extremely high in both vitamin C and salicin, the flavor often closely resembles a cross between an unflavored vitamin C tablet and an aspirin. Willow, reports the University of Alaska Cooperative Extension Service, contains 554 milligrams vitamin C per 100 grams leaves; this is seven to ten times higher than the ascorbic acid content of oranges.

The inner bark of all species is reported safe to eat. Many foragers use this only as emergency sustenance. The cambium can be eaten raw, shredded and cooked like noodles, or dried and ground into a flour for making bannock.

Justina Mike of St. Marys, Alaska, tells of mixing pussy willow flowers with the chopped backbones of king salmon. She says this gets crunchy when dried and is a good source of calcium.

Medicinal Use

When troubled by headache, try steeping (or simmering) a generous portion of willow bark and/or leaves in a cup of water. Willow tincture can also be used. (See Sundew section for tincture directions.) For a menstrual tincture, blend willow with highbush cranberry bark (equal portions). If troubled by excess bleeding, shepherd's purse tincture can also be added.

For hornet stings, chew fresh willow and apply the willow paste on the stung areas for about ten minutes. This Eskimo remedy, reported in *Timimun Mamirrutit*, has been proven quite effective in preventing swelling and relieving pain.

When my father and cousin came to Alaska for vacation, I used Willow Antiseptic as a wash for their infected splinters, scrapes, and insect bites.

The primary healing agent in willow is salicin, an intermediate form of salicylic acid. (Salicin was officially listed in the *United States Pharmacopoeia* from 1882 to 1926.) Today, Americans consume over 130 million aspirin tablets daily. Commercial aspirin, acetyl-salicylic acid, is chemically synthesized in a process involving sodium hydroxide and phenol. Side effects of commercial aspirin range from minor stomach bleeding (each time a tablet is taken) to asthma, rashes, dizziness, and pregnancy complications. Willow, besides containing salicin, has other organic compounds. "These additional organic elements aid salicin in its proven therapeutic effectiveness and apparent absence of harmful side effects," says Austin Bayberry in *White Willow: Nature's Aspirin*.

Willow is famed for its anti-inflammatory properties. Its use was popularized in the 1700s after Reverend Edward Stone, in a letter to the President of the Royal Society, described how willow decoctions had greatly relieved rheumatic pain of the local settlers. Today willow is still a popular ingredient in liniments and massage oils for strained and inflamed muscles.

Willow glycosides, reports *Medicinal Plants of the Mountain West*, ". . . are excreted in the urine as salicylic acid, salicyl alcohol, and related compounds; this renders the tea useful for urethra and bladder irritability, acting as an

Willow Antiseptic

1 cup willow bark and young leaves
2 cups water

Boil willow in water until 1 cup fluid remains. Strain, discarding herbs. Rinse the wound with the willow decoction 3 to 4 times daily. Infected fingers can be soaked in the antiseptic for 30 minutes each day.

analgesic to those tissues." If you're troubled by mouth sores, try chewing on willow leaves or a peeled willow stem; gargling with willow tea is also recommended.

Cosmetic Use

Add willow to footbaths for sweaty feet, and facial steams for acne. For offensive perspiration, add a little borax and a few drops of essential oil to a strained willow bark decoction and apply it freely to your underarms. Willow water is also reputed to help eliminate dandruff.

Historical Use

An ancient prescription for curing warts is to blend willow ashes with vinegar. Rub daily on the affected part until warts vanish.

The symbolism of willow varies in folklore from sorrow and mourning (weeping willow) to regeneration (spring "pussy willows"). For me, willow has always been the hallmark of spring.

Other

Tree willows yield wood for making charcoal, paper pulp, tepee poles, toothpicks, baseball bats, and firewood. Willow shrubs provide stems for basketry, and branches for stimulating circulation in the sauna. Shrubs also yield acid for tanning hides. The dry inner bark is good tinder for starting campfires. Boiled in water, the bark yields fluids that repel mosquitoes.

Willow bark is also a source of natural dye; colors range from deep yellow to avocado green, depending on species and mordant used. Willow-dyed fabric is reported to have good light-fastness.

Dena'ina Athabascan children wave willow branches in the air to make a high-pitched whistling sound that frightens wolves. Upper Inlet people weave the spring bark to make strong string; the string is soaked in water and used as fish hangers, basket rims, and lashing.

Willow is an important food source for wild game; when overbrowsed, however, willows produce inedible shoots. This protective mechanism may be related to the sharp cyclical declines in rabbit populations.

In the Pacific Northwest, "diamond willow" handicrafts are a highly popular tourist item; these canes, furniture, and ornamental items feature attractive diamond-patterned wood with high contrast between the creamy sapwood and reddish heartwood. Diamond willow is not, as many believe, a particular willow species, but rather a condition caused by fungal attack. Gerald Lonz of The House of Diamond Willow gift shop in Seward, Alaska, says "the fungus frequently kills the living bark around the canker at about the same rate as the growth of this tissue, and a rather deep hole or scar, often the shape of the original canker, results after a year or so."

There are about three hundred willow species worldwide. They're a taxonomic nightmare because they hybridize so readily; fledgling foragers can be content with looking for the spring catkins and merely identifying "willow."

Since childhood I've enjoyed gathering pussy willows for the kitchen table. They help relieve the "won't-winter-ever-go-away blues" by assuring you the growing season is indeed at hand. These, and most Pacific Northwest shrubs and trees, can be coaxed into budding if placed in water in a sunny window — even in February!

Woodland Plants and Shrubs with Berrylike Fruits

BANEBERRY (*Actaea rubra*)

OTHER NAMES: chinaberry, doll's eye, bugbane, snakeberry

Crowfoot Family (Ranunculaceae)

Habitat and Range

Moist, shady areas, open woods, and dry slopes are prime habitats for baneberry.

Actaea has two color forms (red and white) and two subspecies (*rubra* and *arguta*). Subspecies *rubra* ranges from west-central Alaska and the central Yukon to northern British Columbia. The hairer subspecies, *arguta*, ranges coastally from the Alaska Peninsula to California.

Baneberry: Pretty but Poisonous

There's an old folklore saying that you can eat any berry that birds eat. Baneberries, however, prove that false. Though the feathered can safely enjoy the bitter berries, we humans would "fly" off to the netherworld if we followed the foraging habits of birds. As few as six berries can spark violent symptoms of poisoning in a hearty adult.

Harvest Calendar

Fall: roots; aerial parts are toxic.

Medicinal Use

Michael Moore, in *Medicinal Plants of the Pacific West*, describes use of dry *Actaea* root as a local replacement for black cohosh (that is, as an anti-inflammatory, peripheral vasodilator, antispasmodic, and sedative). This is a low-dosage botanical (10 to 20 drops of tincture) and should be used internally only by well-trained herbalists. Moore also uses the root externally, as a topical analgesic liniment for sprains.

Historical Use

Cheyenne Indians once used an infusion of baneberry leaves to increase a mother's supply of milk. Thompson Indians, says *Earth Medicine,*

Baneberries can be red or white. As few as two berries can kill a child.

Spring baneberry shoots remotely resemble fiddleheads. Beware!

Baneberry Ornamental

Collect baneberry seeds in late summer. Sow in moist soil in a shady location in fall or spring. Baneberry can also be propagated from roots divided in spring. Use your ornamental baneberry to teach children about wild plants. Poison plants are relatively few in number and are good teaching aids for awareness.

Physical Description
BANEBERRY: *Actaea rubra; a.* POISONOUS; *b.* Grows 1 to 3 feet high; *c.* Fruits may be round or oblong in shape; *d.* Leaflets are thin, sharply divided, with coarse teeth; *e.* Leaves generally number 3 to 5; *f.* Individual flowers are white with 4 to 10 petals; *g.* Flowers are in a spikelike cluster at top of stem; *h.* Berries are poisonous. They are very glossy in appearance, red or white in color, and are characterized by a dark spot on each berry; *i.* Baneberry has a thick rootstock; all parts are poisonous.

Earth Foods, used a root decoction for syphilis and rheumatism. Dosage was critical, however, as death could easily result from overingestion.

Other

Baneberry, the only deadly poisonous berry native to Alaska, is easy to recognize. The fruits, which are sometimes called chinaberries, are porcelain in appearance. Doll's eyes, another common name, alludes to the dark spot prominent on each berry. This black dot somewhat resembles the pupil on the eye of a child's doll. Children, in fact, are highly attracted by this bright, shiny berry. Since the fruits are extremely bitter, deliberately eating more than one is highly unlikely. Poisonings most often occur when youngsters indiscriminately throw handfuls of baneberries into the collecting bucket. Baneberries mixed in with others can still be singled out by the apricotlike seam which joins the "eye" and the stem. For safety's sake, do teach your children to admire this pretty berry from afar.

Our most toxic plants are often striking in appearance, which is why we adopt them for landscaping. Baneberry is no exception. Its reddish spring shoots are attractive and bear the infant bud of the future flower. Mature fruits look as though they've been varnished. It is definitely an eyecatching plant for use as an ornamental.

Caution

Taken internally, baneberries cause heavy dizziness, sharp stomach pains, bloody diarrhea, and death by cardiac arrest or respiratory paralysis. Since the plant is emetic, vomiting will probably occur. If not, induce vomiting immediately by giving Syrup of Ipecac to the patient. (See Treatment of Acute Poisoning at back of book for additional details.) Seek prompt medical attention.

BLUEBERRY AND HUCKLEBERRY

(*Vaccinium* species)

OTHER NAMES: great bilberry, whortleberry, dyeberry, wineberry, moorberry, Mother's Day flowers (*Vaccinium* species); alpine blueberry, bog bilberry (*V. uliginosum*); dwarf blueberry (*V. caespitosum*); Alaskan blueberry (*V. alaskensis*); oval-leaf or early blueberry (*V. ovalifolium*); red huckleberry (*V. parvifolium*)

Heath Family (Ericaceae)

Habitat and Range

Blueberry habitat varies with species; it ranges from thickets, woods, and moist meadows to bogs and tundra. Huckleberries are common in Northwestern woods, roadsides, and rocky slopes.

Pacific Northwest *Vaccinium* species commonly referred to as blueberry include *V. uliginosum* and *V. caespitosum* also known as *V. nivictum* (Alaska and the Yukon to California); *V. ovalifolium* and *V. alaskensis* (Alaska to Oregon); *V. occidentale* (British Columbia to California).

V. ovatum, *V. membranaceum*, and *V. scoparium* (British Columbia to California) and *V. parvifolium* (Alaska Panhandle to California) are all commonly called huckleberries.

Blueberry and Huckleberry: Popular Fruits and Dye Source

According to the Alaskan Flower Essence Project, an infusion of the flowers of bog blueberry, *V. uliginosum*, helps an individual become more receptive to life. (See Flower Essences at back of book.) Though many wild foods tend to have flavors not agreeable to all, I don't know any foragers who disdain blueberries. Read on for details of the many ways to use these delectable fruits.

Harvest Calendar

Spring to early summer: leaves.

Early to late summer: fruits. (Harvest time varies with species and local conditions.)

Food Use

Blueberries are one of the fruits that are hard to gather in quantity because pickers keep mistaking their mouths for berry buckets. For optimum harvest, use the technique recommended to cost-conscious grocery shoppers — eat a hearty meal before setting out on the excursion!

A number of blue-fruited *Vaccinium* species are commonly referred to as blueberries.

Blueberry jams, muffins, and pancakes are the mere tip of the *Vaccinium* iceberg of uses. Both blueberries and huckleberries are excellent for flavoring homemade ice cream, making syrups for topping French toast, adding nutrition to nut breads, and brewing wines. For sweet and simple desserts, blend with yogurt or fruit cocktail. For a Sunday brunch, fill crêpes with the fruits and top with a scoop of ice cream and fruit syrup. Blueberry juice is a special favorite of mine; the syrup diluted with water also makes a zesty breakfast drink. Blueberry pie is, of course, an old favorite and one that well deserves its reputation.

Simmer fresh blueberries in hot cereals and soups. Blend in biscuit dough, and fry in hot oil as fritters. Use dry fruits as a raisin substitute.

Inupiat people, reports *Nauriat Nigiñaqtuat*, pickle fish and bearded seal in blueberries.

Blueberry Pie

Contributed by Ree Nancarrow, McKinley Park, Alaska

1/2 to 2/3 cup sugar (depending on your taste and the sweetness of the berries)
1 cup cold water
3 tablespoons cornstarch
4 cups blueberries (divided)
1 tablespoon butter
1 prebaked pie shell crust

Cook sugar, water, cornstarch and 1/2 cup blueberries until thick. Stir in butter, then cool slightly. Put 3 1/2 cups blueberries in the cooled prebaked pie shell. Pour cooked mixture over the top of the berries. Cool until set. Serves 6.

Fruits are also commonly eaten with seal oil and sugar. *Akutuq*, a blend of fat, oil, liquid, berries, and sweetener, is a popular Eskimo dessert. Fish, meat, or greens are often added to *akutuq*.

Various native groups consider the number of barrels of blueberries collected as a measure of the success of the harvest season. In my home, the jars of blueberry jam and blueberry vinegar filling the shelves are a similar standard.

An excess of blueberries and huckleberries can be easily preserved by freezing. Just pack lightly in jars and place in the freezer. Or spread the fruits on cookie sheets in the freezer for a few hours and then transfer to zip closure bags or plastic containers.

In the Alaskan Interior, blueberries are placed in kegs in a cold place. A layer of berries is thickly covered with sugar to discourage fermentation and mold. Another sugarless method, says Ole Wik in September 1979 *ALASKA* magazine, involves pressing the fruits to release the juice and topping them with a quarter-inch layer of vegetable oil to form an airtight seal; store in a cold hole near the permafrost.

Blueberries can also be preserved by canning. Place the fruits in sterile jars and cover with a sugar syrup; process for twenty minutes in a boiling water bath.

Medicinal Use

My father, who is borderline diabetic, insists that regular use of blueberry leaf-alfalfa tea helps maintain a stable blood sugar level. Medical studies have registered decreases in blood sugar levels after administration of the leaf extracts. Huckleberry leaf tincture, reports California herbalist Christopher Hobbs, is used to treat hypoglycemia.

Blueberry fruits, says *Sauna for Health*, are high in iron and mineral salts. He recommends the fruits with milk for convalescents and tubercular patients. *The Herb Book* adds that "eating the fresh berries has been observed to regulate bowel action, stimulate appetite, end intestinal putrefaction (which produces gas and flatulence) and expel ascarids."

Blueberry juice is a good mouthwash and is reported helpful for sore throat and inflamed gums. Leaf (and bark) decoctions are recommended as as gargle for mouth and throat sores; sip the astringent decoction if you are troubled by diarrhea. Leaves are also antiseptic and used in teas for urinary disorders.

Historical Use

The ancient common name "bleaberry" comes from the North Country *bleae* for bluish. The nickname "bilberry" is from the Danish *bollebar*, meaning dark berry.

Vaccinium fruits have also been called "wineberry" and "dyeberry"; the French often added the berries to wines for color and flavor. In addition, the fruits have been used as blue and red-purple dyes for woolens.

For natives of various cultures, blueberries were a popular food. They were consumed fresh, dried like raisins, or mashed into nutritious cakes. Often they were blended with meat and fat into pemmican. *Edible Wild Fruits and Nuts of Canada* mentions that the Inuits avoided *V. uliginosum* because they believed that the sweet fruits encouraged tooth caries.

Wild Flowers of the Pacific Coast notes that huckleberries were banned by some Indian tribes due to the Alsea myth that the shrub was created by Asin, a monster girl who carried people away in the woods. If you ate the red fruits, your mind and

body (says the tale) would wander into her clutches.

Other

Teacher Tania Spurkland of Anchorage, Alaska, says that "Mother's Day flowers" was her childhood name for blueberry blossoms. A bouquet of the early-blooming, bell-like flowers was her traditional gift for the May holiday. In Alaska they can also be gathered on Father's Day in many areas.

A practical field use for fruits of the *Vacciniums* is fish bait. The berries have been used successfully to catch fish and add a protein course to campfire meals.

Blueberries and huckleberries are often cultivated by man. Wild plants adapt well to acid garden soils. Boyd Shaffer of Soldotna, Alaska, advises periodically plowing the center of your patch and introducing new bushes to encourage berry production. *Hortus Third* says that many growers prune lowbush blueberry species every two to three years by burning plants while the ground is still frozen. "Plants produce their fruiting wood the first growing season after burning and the first crop appears the following year." Plants are often covered with netting to prevent bird depredation.

Birds and bears are fond of blueberries. One of my vivid childhood memories surrounds a prime blueberry patch in Washington, New Hampshire. My sisters and I enthusiastically gathered berries for my mother's pies and neighbor's coins until the day a deep throaty growl laid claim to a prize bush. With fleet feet, we entrepreneurs abdicated our claim and promptly switched careers to peddling farm produce and Christmas cards. In Alaska I've returned to sharecropping with the wild creatures: so far my loud singing has insured free space for my berrying.

Caution

An excess of blueberry and huckleberry leaf tea is said to spark minor symptoms of poisoning. Normal doses are generally quite harmless. As always, proceed slowly until you're familiar with how your own system reacts.

Physical Description

BLUEBERRY: *Vaccinium* species; *a*. Oval-leaf blueberry (*V. ovalifolium*) can grow to 15 feet high; *b*. Leaves are oval with smooth margins; *c*. Fruits are purple to blue-black, very sweet and tasty; *d*. Oval-leaf blueberry flowers early; *e*. Dwarf blueberry (*V. caespitosum*) grows to 1 foot high; *f*. Leaves of dwarf blueberry are glossy green on both sides; *g*. *V. uliginosum* flowers WITH the leaves. For a complete description of the blue-fruited *Vaccinium* species, consult a local flora; *h*. Bell-shaped flowers are typical of *Vaccinium* species; color varies from pink to white; *i*. Dwarf blueberry is a short, tufted shrub. Fruits have a whitish bloom, and leaf edges are densely serrated.

HUCKLEBERRY: *Vaccinium parvifolium* (illustrated); *j*. Shrub to 10 feet high; *k*. Fruits are bright red; *l*. Bell-like flowers vary in color from pinkish to yellow or green; *m*. Leaves are roundish to oval in shape; *n*. Branches and twigs are ridged.

The large white "petals" of the dwarf dogwoods are actually modified leaves called "bracts." The true petals and flowers are in the center.

Each tiny flower develops into a bright red, berrylike fruit. (Edward Schofield)

American dogwood is well suited as a garden ornamental.

BUNCHBERRY (dwarf *Cornus* species)
AMERICAN DOGWOOD (*C. stolonifera*)

OTHER NAMES: dwarf dogwood, dwarf cornel, pigeonberry, crackerberry, pudding berry (dwarf *Cornus* species); red-osier dogwood, red-stem dogwood, dogberry (*C. stolonifera*)

Dogwood Family (Cornaceae)

Habitat and Range

Dwarf dogwoods are common ground cover in spruce and cedar forests. Dwarf dogwood species include *Cornus canadensis* (central Alaska and the northern Yukon to California), and *C. suecica* and the hybrid of the two species (western and central Alaska to British Columbia).

American dogwood, *C. stolonifera*, favors stream banks, edges of fields, and moist woods. It ranges from central Alaska and the Yukon south to California.

Other Pacific Northwest species of interest, to mention a few, include the ornamental flowering dogwood, *C. Nuttallii* (British Columbia to California) and other dogwood shrubs and trees such as *C. sessilis* (California), *C. occidentalis* (British Columbia to California), and *C. glabrata* (Oregon to California).

Dogwoods: Different Heights, Different Uses

The shrubby, white-fruited American dogwood of the Alaskan Interior is in the same genus as the dwarf, red-fruited bunchberries that commonly carpet Northwestern coniferous forests. Though the plants share a botanical classification, their practical plant use is as different as their appearance.

Harvest Calendar

Spring and fall: bark of American dogwood.

Late summer: ripe red fruits of bunchberries.

Food Use

The flavor of raw bunchberries is quite bland and unexciting, but when blended with

sweet fruits like raspberries, acceptable products can be made. In New England, bunchberries were fondly called "pudding berries" and were often used to make "plum duff" and other steamed puddings. Since bunchberries are high in pectin, they're an effective thickener when making jams with low pectin fruits.

The bitter white fruits of the shrubby *C. stolonifera* have been eaten by some Canadian Indians. This species, however, can spark vomiting and mild symptoms of poisoning.

Medicinal Use

Dwarf bunchberry plants, steeped in water, are reputed to be an appetite-stimulating tea. Scots call *Cornus* the "herb of gluttony"; it is a good herb to avoid when on a weight loss program!

The dried bark and root of American dogwood is a traditional herbal remedy for colds and fever. The plant's dogberry nickname, according to *A Modern Herbal*, originated from use of decoctions of the red bark to wash mangy dogs.

Cosmetic Use

The dogwoods are astringent and good for an after-facial splash, and for steams for oily skin. Use the whole herb for dwarf species, the bark and roots for the white-fruited shrub.

Historical Use

Bunchberries have long been used by native groups throughout Alaska and the western states. The red drupes have been eaten

Physical Description

BUNCHBERRY: dwarf *Cornus* species; *a*. Grows to about 6 inches high; *b*. 4 showy, white, petal-like bracts surround the tiny central yellow-green flowers; *c*. Edges of leaves are smooth. Tips of leaves are quite pointed (acute); *d*. Leaves have distinct, moderately curved veins; *e*. *C. suecica* has 3 sets of leaves below the top whorl; *f*. Grows from a creeping rootstock (rhizome); *g*. Each flower develops into a bright red fleshy *edible* fruit (drupe). Each drupe contains 1 seed; *h*. The 6 upper leaves are arranged as a whorl; *i*. Lower leaves are arranged in pairs. *C. canadensis* has 1 pair of leaves below the top whorl; *j*. The hybrid *C. canadensis x suecica* combines several of the traits of *C. canadensis* and *C. suecica*. This species is sterile and propagates vegetatively.

AMERICAN DOGWOOD: *Cornus stolonifera; k*. Shrub grows to 12 feet high; *l*. Flowers are arranged in a flat-topped cluster; *m*. Fruit is white, bitter, and *inedible*. Large flat seed is present in each fruit (drupe); *n*. Leaves are oblong to lance-shaped (longer than broad) and sharp-pointed at the tip; *o*. Bark is reddish brown: strikingly red against winter snow.

Bunchberry-Raspberry Pancake Topping

2 cups bunchberries
2 cups raspberries
4 tablespoons water
1/4 cup honey

Place fruits in small saucepan with water and honey. Cook until soft, about 10 minutes. Press cooked fruit through colander or food mill. Use on pancakes and crêpes. Store remainder in jar in refrigerator or root cellar.

raw (often topped with seal oil), and boiled with other berries. Eskimos stored the berries with water and grease for winter use.

According to a Vancouver legend reported in *Edible Wild Fruits and Nuts of Canada,* bunchberries ". . . originated from the blood of a young woman who was marooned at the top of a red cedar tree by her jealous husband. Wherever a drop of her blood touched the ground, a bunchberry plant grew."

Other

Bunchberries are one of my favorite woodland plants and are beautiful throughout the season. If you look closely at their spring floral display, you'll discover that the snowy, showy "petals" are really modified leaves or "bracts" and that the true flowers are the greenish-yellow centers. Later in the summer, the inconspicuous blossoms become a bunch of bright-colored berries, hence their common name "bunchberry." As the cold days creep in, the foliage turns as crimson as the fruits.

A spring, summer, or autumn walk through a bunchberry-carpeted forest is a delight!

The flowers also do well in the shady home rock garden. *Wild Flowers of the Pacific Northwest* recommends that when transplanting, gardeners retain ". . . a good quantity of decaying wood . . . through which the root-stocks may happily rove."

American dogwood, as well as the stately flowering dogwood, are fine ornamentals. Besides their aesthetic value, the fruits attract wildlife. The dwarf dogwoods, or bunchberries, are equally attractive and are quite popular forage plants for deer.

Caution

Use only DRIED bark of *C. stolonifera;* the fresh shrub bark can be quite purgative to the intestinal tract. The white fruits of American dogwood are not recommended for internal use as they can cause toxic reactions.

Though red *Cornus* fruits are generally considered safe, some individuals have experienced nausea and headaches after eating them in large quantities.

CURRANT (*Ribes* species)

OTHER NAMES: gooseberry, dog bramble; bristly black currant (*R. lacustre*); stink currant (*R. bracteosum*); skunk currant (*R. glandulosum*); trailing black currant (*R. laxifolium*); northern red currant (*R. triste*); northern black currant (*R. hudsonianum*); golden currant (*R. aureum*); flowering red currant (*R. sanguineum*)

Saxifrage Family (Saxifragaceae)

Habitat and Range

Moist woods, open areas, stream banks, meadows, roadsides, and logged areas are prime habitats for currants.

Numerous *Ribes* species are distributed throughout the Pacific Northwest. Species noted for exceptional flavor include northern red currant, *R. triste* (northern Alaska and the Yukon to Oregon), golden currant, *R. aureum* (south-central British Columbia to California), and flowering red currant, *R. sanguineum* (southern British Columbia to California).

Ribes: Strong-Scented Shrubs with Friendly Fruits

The nicknames stink currant *(R. bracteosum)* and skunk currant *(R. glandulosum)* don't make currants sound especially appetizing. Botanist Boyd Shaffer, however, compares them to Limburger cheese. Despite the odor of the foliage, the fruits are well worth incorporating into preserves and pies. Those with more "delicate" sensitivities might prefer the select fruits of northern red, golden, or flowering red currants.

Harvest Calendar

Spring to summer: leaves.

Mid- to late summer: fruits. Fruits are best for preserves when slightly underripe.

Food Use

Currant fruits may be nibbled raw as a trail snack or cooked as breakfast topping for cereal or hotcakes. Many foragers like blending currants with sweeter berries in pies, alcoholic brews, and fruit leathers.

For fowl or lamb, currant-mint jelly is a

Gooseberry is the common name for *Ribes* species with prickly fruits.

Physical Description

CURRANT: *Ribes* species; *a.* Grows 1 to 6 feet high; *b.* Leaves have 3 to 7 lobes; foliage has a strong scent; *c.* Flowers vary with species from upright to drooping clusters (racemes); flowers may be white, pinkish, or greenish; *d. Ribes* fruits may be prickly or smooth, depending on species; *e.* Northern red currants, *R. triste,* have smooth, bright red fruits and stems that lack prickles. Stem bark shreds easily. This species is considered choice in Alaska.

memorable accompaniment. Currants, blended with raspberries, apples, or rose hips also make unique preserves. A report in *Foxfire 3* says spiced currants are traditionally served with roast turkey at Christmas and Thanksgiving.

Ribes leaves may be added to herbal tea blends, and/or used to flavor black tea. Make certain leaves are fresh or thoroughly dried, not wilted. Toxins are present in many leaves while in the wilted state.

Fruit Leather

4 cups currants
1 cup water
1/2 cup honey

Simmer currants in water until soft. Process through food mill. To pulp, add honey and mix well. Spread on cookie sheets on layer of plastic wrap. Place in sun or 200°F oven to dry.

Medicinal Use

According to the Soviet trade union journal *Trud*, "Moscow's Institute of Biological Physics has shown the acid in unripe gooseberries can prevent disintegration of body cells, which causes illness and old age." *Ribes* are traditionally recommended for convalescents. Fruits are extremely high in vitamin C and are one of the richest plant sources of copper. Currants are often recommended as an appetite stimulant for those "off their feed."

The Herb Book recommends currant leaf tea for rheumatic problems and arteriosclerosis, and dried berry tea as a gargle for mouth inflammation and sore throat. Other home remedies include eating whole currant fruits to regulate the bowels, applying currant jelly on burns, sipping currant syrup for whooping cough and colds, and drinking diluted currant juice for upset stomach and cramps.

Dena'ina Athabascans boil the peeled stems of red currant (*R. triste*) in water. The tea is used internally for colds, flu, and tuberculosis, and externally as an eyewash.

Historical Use

Currant leaves, flowers, and berries were staples in various native groups. *Food Plants of British Columbia Indians* reports that berries were dipped in grease and salmon roe, and then pressed into cakes and dried. At feasts, it was believed you'd be smitten with bad luck if you didn't consume your entire portion of currants.

Western pioneers and explorers often blended the fruits with meat and hot fat. Europeans once avoided eating *Ribes* as they believed the fruits encouraged the growth of intestinal worms. Later, currants were prized for their ability to cure rheumatism, gout, and kidney complaints. During World War II, the British extensively cultivated black currants; the vitamin C-rich fruits were used to nourish infants and children.

The botanical name *Ribes* stems from the Arabic *ribas*, meaning "a plant." "Currant" is a corruption of Corinth, the place where a fruit similar in appearance to the wild *Ribes* thrived. Gooseberry is another common name for currants that are bristly rather than smooth; some botanists list such plants in a separate genus.

Other

There are about eighty *Ribes* species in North America. In regions where white pine is important, currant growing has been restricted by law since *Ribes* are an alternate host of the white-pine blister rust. The Canadian government, as well as American horticulturists, have been developing pine varieties immune to this disease; hence currant cultivation is again becoming popular.

DEVIL'S CLUB *(Oplopanax horridum* also known as *Echinopanax horridum)*

OTHER NAMES: Alaskan ginseng; *suxt*

Ginseng Family (Araliaceae)

Habitat and Range

Devil's club forms dense thickets in moist woods. It ranges from south-central Alaska and the extreme southwest Yukon coastally to California.

Devil's Club: Plant of Magic and Medicine

Devil's club's botanical name, *O. horridum,* descriptively translates as "a prickly porcupine-ginseng." The spiny shrub is one plant that's easy to identify and hard to forget. Those who have brushed the plant have probably had festering splinters as lingering reminders of their carelessness.

Tweezers are a good addition to the daypack in devil's club country, but if you forget the tool you can always try a devil's club poultice for treating the infection caused by the spines. Wearing gloves is highly recommended for hikes in *Oplopanax* country; preventive medicine remains my favorite therapy.

Harvest Calendar

Early spring: shoots (only edible for the first few days after their appearance).

Spring: roots.

Food Use

After hearing about Chuck Rice of Hope, Alaska, eating devil's club, I eagerly sought details and then impatiently waited for spring to conduct a personal field test. The time to harvest is when the spiny stalk first sprouts green growth. The leaf spines, though visible, are soft and pliable at this stage; once they stiffen, the shoots should NOT be consumed.

These leaf clusters may be nibbled raw, but I especially like adding them to omelettes, casseroles, and soups. Use them as you would a spice. One or two is sufficient to add a unique tang to a common meal.

Early spring, when leaf shoots appear, is prime season for harvesting roots.

The bright red fruits of devil's club are well liked by bears and ornamental gardeners. (Jon R. Nickles)

Medicinal Use

Devil's club contains glycosides (including araliasides and panaxosides), and essential oils (nerolidol, cedrol). It is classified as an herbal adaptogen, i.e., it affects the body's hypothalmic-pituitary axis, thus modifying stress response.

Devil's club attracted medical attention in 1938 when Brocklesby, a British Columbia

Spring Fever

A Tonic Tea for End-of-Winter Blues

1/2 cup shredded devil's club root
1 cup chopped dandelion root and young leaves
1 cup nettle leaves
3 tablespoons poplar buds
1/4 cup willow leaves
1 cup spruce tips

Blend dried herbs. Store in a dark place in an airtight container. Steep 1 teaspoon herb per cup water for 5 to 10 minutes. Strain and serve. Add honey if desired.

Physical description
DEVIL'S CLUB: *Oplopanax horridum; a.* Grows to 8 feet; *b.* Stems covered with large prickles; *c.* Small white flowers are arranged in umbrellalike groups (umbels) and form an elongated cluster (raceme); *d.* Fruits are inedible, scarlet berries; *e.* Leaves are large, maplelike, with 5 to 7 shallow or deep lobes; have spines on underside of leaves.

physician, discovered that his patient was successfully stabilizing his diabetes with devil's club root bark infusions. In laboratory tests conducted by Large and Brocklesby in 1938, devil's club showed no apparent toxicity. Devil's club has been shown to have an amphoteric (normalizing) effect on blood sugar. At the New Mexico Herbal Center in Albuquerque, type I (adult onset) diabetics experienced lowering of blood sugars when taking *Oplopanax* in conjunction with blueberry leaf tea and dietary modifications. Clients with low blood sugar also obtained positive responses.

Michael Moore, director of the Southwest School of Botanical Medicine, writes in *Medicinal Plants of the Pacific West,* "the cold infusion, and to a lesser degree the fresh or dry tincture, is clearly helpful for rheumatoid arthritis and other auto-immune disorders, taken regularly and with sensible modifications in the diet. It is most helpful when taken during remissions and has little effect during active distress; its main value is in modifying extremes of metabolic stress...."

Devil's club belongs to the same family as Oriental ginseng, and like ginseng, is used as a body-balancing and system-strengthening tea. Southeast Alaska Indians believe that regular use prevents cancer. I frequently add devil's club to tonic blends, such as Spring Fever.

Tlingit and Haida tribes, reports Dr. Justice in June 1966 *Alaska Medicine,* use devil's club bark infusions ". . . for general strength, colds, chest pain following a cold, arthritis, black eyes, gallstones, stomach ulcers, constipation." Justice adds that the chewed stalk is ". . . spit directly upon open wounds as an emergency analgesic measure. The bark may be laid in strips, inner side against the skin, to reduce the pain and swelling from a fracture."

Alex Wennekens, in July 1983 *Alaska Native News,* says that Aleuts of Prince William Sound drink devil's club tea for cold and pain relief; in addition, they burn bark to a white ash and apply this to cuts to hasten healing. According to Wennekens's Aleut informant, Ted Chimnisky, "devil's club, steeped in hot water overnight and added to bath water, is a soothing body soak for rheumatism or arthritis."

Various Pacific Northwest native groups use devil's club decoctions as an external wash for boils and festering skin irritations (such as those caused by devil's club spines). Other treatments for infection include covering the wound with a paste made by mixing the root powder with water, and applying a poultice of hot, mashed roots. Pastes and poultices are also used for relieving pain and swelling from insect bites and stings. The effectiveness of such treatment was verified by a friend stung by a wasp while hiking; repeated applications of the mashed, boiled root quickly reduced both swelling and pain. If you're troubled by toothache on a camping trip, try chewing a piece of devil's club root until it is soft and pulpy, and placing this on the painful area.

During epidemics, devil's club root is burned as a smudge, or drunk as tea (with Labrador tea or clover roots).

Cosmetic Use

Add shaved devil's club bark to sore muscle liniments, massage oils, and skin salves. The powdered root is a good ingredient in bath powder. I've found *Oplopanax* a superior addition to winter footbaths for cold feet. Like mustard and cayenne, devil's club has a pronounced skin-stimulating effect.

Historical Use

In southeast Alaska, Tlingit shamans underwent initiations that involved a wilderness solo and a devil's club fast. Haida hunters, about to embark on expeditions, traditionally bathed in root decoctions; they also ingested the root decocted in salt water or seal oil in order to provoke vomiting and cleanse the system.

According to legend, Tlingit use began when a shaman observed bears wallowing in devil's club roots to soothe their wounds. Many Indian folktales, says Leslie Haskin in *Wild Flowers of the Pacific Coast*, ". . . record how the fleeing hero, when in distress, throws behind him some prickly object, which, by his magic, becomes changed into an impassable tangle of devil's club in which the pursuing enemy becomes entangled and sadly torn."

Devil's club is still regarded as a protective force in some localities. Placed above doorways and on fishing boats or worn as an amulet, it's said to ward off evil. Shamans often wore necklaces of the root laced with spruce and had purification huts woven from devil's club stems. When treating illness, they traditionally touched the affected area with their devil's club charm, or had the sick individual jump through a devil's club hoop.

Other

Other devil's club uses, ancient and modern, include using dry roots as snuff, mixing root ashes with bear grease for a reddish-brown face paint, and carving roots for fishing lures. (Some natives attached cut pieces of the root to weighted hooks in such a way that they released and spun to the surface, luring fish within spearing distance.) Devil's club was used ceremonially to end periods of bad weather or bad luck. The spiny stems were once instruments of torture for extracting confessions from "witches."

On a brighter note, devil's club can be placed in a "nonbumpable" and shady spot for home landscaping. The showy leaves, which turn golden in fall, and the scarlet clusters of berries are a dramatic accent.

Caution

Use caution when hiking near devil's club, as the spines can cause festering wounds. Michael Moore recommends devil's club not be used during pregnancy or by those with confirmed heart disease.

Diabetics should use devil's club internally under medical supervision as dosages of oral hypoglycemics may require adjustment.

Generally plant roots can be harvested spring or fall. However, with devil's club spring harvest is traditional. A March 1967 article in *Alaska Sportsman* warned that "after fall frosts have killed devil's club, the sap, lying dormant, ferments into a can-be-deadly poison and may require medical attention." I'd rather discounted this report until learning of violent vomiting and diarrhea following ingestion of devil's club beer. The experienced brewer theorized that perhaps the fermentation of the herb triggered the reaction of those who sampled the brew.

Highbush cranberry in fruit. The foliage and fruits add a crimson touch to Alaskan autumn. (R. W. Tyler)

Close-up of highbush cranberry in fruit. (Janet R. Klein)

HIGHBUSH CRANBERRY (*Viburnum edule* also known as *V. pauciflorum*)

OTHER NAMES: squashberry, mooseberry, sheepberry (*Viburnum* species); highbushberry, cramp bark (*V. edule*); snowball, whitten tree, (*V. opulus*); Western viburnum (*V. ellipticum*)

Honeysuckle Family (Caprifoliaceae)

Habitat and Range

Woods, riverbanks, and thickets are highbush cranberry habitats.

The red-fruited *V. edule* ranges from northeast Alaska and the northern Yukon to northern Oregon.

V. opulus is a species with showy flowers common to British Columbia and Washington.

V. ellipticum is a black-fruited *Viburnum* distributed from Washington to California.

Highbush Cranberry: Fruit of a Different Family

Despite its cranberry name and taste, the highbush cranberry is totally unrelated to the Thanksgiving favorite. The true cranberry belongs to the heath family, whereas the highbush shares the honeysuckle family with such diverse northwestern plants as the diminutive twinflower *(Linnaea)*, the shrubby elder *(Sambucus)*, and the showy honeysuckle *(Lonicera)*. Common denominators for members of the honeysuckle family include opposite leaves, and flowers with parts in fives (outside of twinflower, which has four stamens).

But don't let the nomenclature nonsense inhibit you — go ahead and enjoy the fruits. Run them through a food mill to remove their large flat seeds, and then use them in any cranberry recipe.

Harvest Calendar

Summer: blossoms.

Late summer to early fall: fruits. (NOTE: "Proper" time of harvest is a matter of controversy among foragers. The fruits, which are hard and exceedingly sour before frost, become soft and mildly acidic after exposure to chilly autumn evenings. As they age and sweeten, however, they develop a musty odor some find

objectionable. Though definitely better as a trail snack after frost, highbush cranberries are often picked before, when slightly underripe, for the making of "superior" preserves.)

Food Use

Highbush cranberry flowers can be added to pancake and cake batters. Blossoms can also be batter-dipped and fried (though I prefer the flavor and texture of elder fritters).

JoAnn Nelson of Dillingham, Alaska, is one forager who picks highbush cranberries before they are fully ripe and processes them into jam. She recommends a proportion of one cup sugar to one cup fruit. Nelson says her children love it when the jam doesn't jell; the syrupy "mistake" is their favorite pancake topping.

Sieved, sweetened *Viburnum* pulp makes an excellent sauce for wild and domestic meats; use with venison, rabbit, poultry, or pork. Highbush Cranberry Catsup is also good with rice and vegetarian dishes.

Cooked and sweetened, highbush fruit has a rather conventional cranberry taste. Raw fruits generally spark a pronounced positive or negative response, but circumstance can affect the taste judgment. If you are cross-country skiing and happen upon a patch of the frozen fruits, you're apt to regard the thirst-quenching morsels as some sort of heavenly nectar. My fondness for highbush cranberries developed under the adversity of a soggy spring camping trip; the over-wintered, whole fruits added tangy flavor and nutty texture to the morning hotcakes.

Medicinal Use

"Cramp bark" is the name commonly given to *Viburnum* bark. The herb is an effective antispasmodic for relief of menstrual and stomach cramps, as well as asthma. The muscle relaxant properties are due to the presence of the bitter glucoside, viburnine. To prepare, just steep one tablespoon fresh, or one teaspoon dry bark in a cup of boiled water. Slowly sip the tea until cramps are relieved. Boyd Shaffer reports using this remedy in survival classes with great success.

Cramp bark can also be tinctured for the home medicine chest. (See Sundew section for tincture directions.) To use the tincture, add ten to fifteen drops to a cup of water. After giving a dose to my colicky dog, I witnessed significant relief.

Dena'ina Athabascans sip cramp bark decoctions for stomach upset and colds. In English Bay, fluid from the boiled inner bark is used to wash infected cuts.

Highbush Cranberry Catsup

4 cups highbush cranberries
1 cup water
1/2 cup vinegar
1 cup applesauce
1 cup honey
1 teaspoon cinnamon
1/2 teaspoon each cloves and ginger

Place berries in stainless steel saucepan. Add water and vinegar. Slowly bring to a boil, then lower heat, and simmer until soft (5 to 10 minutes). Process through food mill. To pulp, add applesauce, honey, and spices. Cook slowly until mixture is thick. Pour into sterile jars and seal. Process in hot water bath for 10 minutes.

Historical Use

Food Plants of British Columbia Indians notes that central and northern coastal tribes commonly picked slightly underripe fruits and stored them, after steaming, in water in cedar boxes. These berries, dipped in grease, were served at feasts and used as an item of barter. Vancouver's Kwakiutl Indians considered a box of berries the equivalent of two pairs of blankets. The berry patches themselves were owned by various families. Only owners were entitled to harvest the fruits; the patches were passed from generation to generation. Since the highbush cranberries were considered the food of the Great Spirits, ownership was a very prestigious affair.

Earth Medicine, Earth Foods reports that in Maine, Penobscot and Malecite Indians used *Viburnum* infusions for mumps. "Down East" loggers traditionally flavored the fruits with

molasses. Scandinavians fermented the berries for wine-making; fruits were often eaten mixed with flour and sweetener. Other traditions include using highbush cranberry wood as skewers for roasting meat, berries as a source of ink, clothing dye, and fish bait, and bark as an herbal smoking tobacco.

Other

Highbush cranberries are aphid-resistant shrubs that grow well in slightly acidic soil. Their lovely blossoms and crimson foliage offer season-spanning beauty. The fruits, as the botanical name *edule* attests, are edible. They're also well liked by songbirds. For ornamental gardeners, *V. opulus*, commonly called snowball, is a favorite. The center flowers of the showy white clusters produce red fruit, whereas the outer flowers are sterile. Cultivars that produce even more dramatic blossom displays are also available from nurseries, but the price paid is full sterility, and hence no fruit.

Physical Description

HIGHBUSH CRANBERRY: *Viburnum edule;* *a.* Erect to straggly shrub; grows to 8 feet high; *b.* All parts are in pairs; leaves are in opposite arrangement; *c.* Two lance-shaped leaves grow at top of the stem; *d.* Leaves are very dark green with an irregular shape; *e.* Fruits are tart and "cranberry" in taste. Each fruit has 1 large flat stone; *f.* Buds and leafstems are reddish to maroon. Leaves turn red in late summer; *g.* Flat clusters of white flowers are on short branches; flowers have 5 petals and 5 stamens.

MOUNTAIN ASH (*Sorbus* species)

OTHER NAMES: rowan, sorb apple, quickbeam (*Sorbus* species); Sitka mountain ash, western mountain ash (*S. sitchensis*); European mountain ash (*S. aucuparia*)

Rose Family (Rosaceae)

Habitat and Range

Woods and moist soils of mountain slopes are habitats for mountain ash.

S. sitchensis ranges coastally from south-central Alaska and the Alaska Panhandle to central California.

S. scopulina ranges from Seward Peninsula and south-coastal Alaska and the central Yukon to California.

S. aucuparia, is a European species that can be growing wild from the Alaska Panhandle to California.

Other Pacific Northwest species of interest include *S. cascadensis* (British Columbia to California), *S. californica* (California), and *S. sambucifolia* (western Aleutian Islands, Alaska).

Mountain Ash: Edible Ornamental

Though edible, mountain ash is probably most regarded as an ornamental. Its showy blossoms, golden autumn leaves, and persistent crimson fruits brighten city boulevards and parks, as well as northwestern yards.

Man often introduces mountain ash, but it is the birds that spread the seeds into remote areas. *Alaska Trees and Shrubs* reports that European mountain ash (*S. aucuparia*) "... is the only introduced or exotic tree to become established in Alaska and grow as if wild. Its species name, meaning to catch birds, refers to the use of the mucilaginous fruits by fowlers in making birdlime." The genus name, *Sorbus*, is Latin for "a kind of tree."

Harvest Calendar

Early autumn: fruits, after frost.
Fall or spring: bark.

Food Use

Mountain ash fruits, which botanically are called "pomes," are sweetened by frost. In

Sorbus species are sold by garden nurseries for ornamental shrubs and trees.

Rose-Plus Preserve

A Vitamin C-Rich Jam Made with 3 Rose Family Members

3 cups mountain ash fruits, gathered after frost
3 cups rose hips, gathered after frost
3 cups diced apples
Water
2 cups honey
1 teaspoon nutmeg
1 teaspoon cinnamon
1 teaspoon cloves

Place fruits in large stainless steel pan with enough water to cover them. Simmer until fruits are soft. Process through food mill to remove seeds and skin. Place clean pulp in pan. Add honey. Bring to boil, stirring constantly. Lower heat and simmer gently about 20 minutes. Stir in spices. Add extra sweetening or spices if desired. Pour into sterile jars and seal.

Europe, the pomes are commonly processed into jams and jellies; they are often blended with apples. This apple-ash preserve is a superb accompaniment to venison or moose. Due to the high pectin content, it jells readily without the addition of a commercial agent.

A wilderness lemonade can be obtained by soaking 2 cups crushed ripe mountain ash fruits in $1^1/_2$ quarts water for 2 hours; strain, sweeten, and serve over ice. For a coffee substitute, grind the dried, roasted fruits. Another mountain ash beverage is the fermented berry product; this yields a tangy, bittersweet wine.

Nutritionally, the fruits are high in vitamins A and C, as well as carbohydrates; they are low in fats and protein. For winter use, mountain ash pomes may be canned, dried, or frozen. Storing them in a porous cloth sack in a root cellar is also reported effective.

Medicinal Use

Mountain ash berry juice has been used as a gargle for sore throat and laryngitis, and as an antiseptic wash for cuts and hemorrhoids. The diluted juice is drunk for stomach and intestinal disorders, and the astringent bark, decocted in water, is a traditional wash for disinfecting wounds.

Herbalist Lust, in *The Herb Book*, recommends taking one tablespoon of the jam, three to five times a day for diarrhea. "One of the sugars contained in the fruit," adds Lust, "is

Physical Description

MOUNTAIN ASH: *Sorbus* species; *a*. May be shrub to medium tree. *S. aucuparia* is the tallest species, and sometimes escapes from cultivation. *S. scopulina* and *S. sitchensis* are most common in northern regions, generally to 12 feet high; *b*. Fruits (pomes) are orange to bright red for *S. scopulina*. Fruits of *S. sitchensis* are red with bluish bloom. Other species have bright red fruits; *c*. Leaves are pinnately compound. *S. sitchensis, S. sambucifolia,* and *S. californica* have 7 to 11 leaflets. *S. scopulina* has 11 to 13 leaflets. *S. aucuparia* has 9 to 17 leaflets. *S. cascadensis* has 9 to 11 leaflets; *d*. Inflorescence is a flat-topped cluster made of many small flowers with 5 white petals, 5 sepals, and many stamens; *e*. The winter buds, young twigs, and inflorescence branches have rusty short hairs (pubescence) in *S. sitchensis* and *S. sambucifolia*. Pubescence is white in *S. scopulina* and *S. aucuparia*.

sometimes given intravenously to reduce pressure in the eyeball in cases of glaucoma."

Historical Use

Dried mountain ash fruits were ground as meal in times of famine both by Europeans and native peoples. North American Indians formed the mashed berries into cakes. Explorers ate the fresh fruits to cure scurvy. The Scots have long favored mountain ash marmalade, and cider-like cordials. The Finns make a mountain ash liqueur called *pihjalanmarjaviini*!

Europeans typically refer to *Sorbus* trees and shrubs as "rowan"; frequent mention of this plant occurs in eighteenth- and nineteenth-century literature. It's said rowan trees were venerated by the Druids. Some folks believed mountain ash had the power to drive off witches.

Mountain ash flower clusters add an aesthetic touch to gardens.

Other

Mountain ash is not related to ash trees (which belong to the olive family) but rather to apples and crabapples (members of the rose family). In our region, mountain ash varies in size from a shrub to a medium tree (twenty to forty feet). It is well liked by backyard gardeners and bird lovers, as the fruits are attractive and entice both migrating and resident songbirds.

Mountain ash wood is suitable for making toys and other small objects. The plant is hardy and adapts well to cultivation in many areas. In some states the trees are raised for the natural sugar found in the fruits; this sugar, sorbitol, is being used commercially for sweetening candies, toothpastes, and other products.

Caution

Though mountain ash jam can tighten too-loose bowels, an excess of the fresh fruits or juice might spark diarrhea. Fruits are also high in tannin and should not be consumed in large or frequent quantities.

Salmonberry fruits may be red or orange at maturity. (Jon R. Nickles)

Thimbleberry leaves are large and tissue soft; flowers are white.

SALMONBERRY (*Rubus spectabilis*)
THIMBLEBERRY (*Rubus parviflorus*)

OTHER NAMES: muck-a-muck (*R. spectabilis*)

Rose Family (Rosaceae)

Habitat and Range

Thickets of salmonberries and thimbleberries are common in moist woods and lower mountainous regions, and along roadsides.

Salmonberry, (*R.spectabilis*), ranges from the Alaska Peninsula, south-central, and southeastern Alaska to California.

Thimbleberry, (*R.parviflorus*), reaches from the Alaska Panhandle to California.

Salmonberry and Thimbleberry: Multi-purpose Shrubs

Salmonberries and thimbleberries are raspberry cousins that range from Alaska to California. Botanically they are members of the *Rubus* genus, a grouping that includes many white-flowered plants. As the name *spectabilis* indicates, salmonberry has "showy" flowers; blossoms are dark pink or magenta. The fruits look much like plump raspberries, but may be either red or orange at maturity. Some folks insist the lighter colored fruits are better; others insist there is no taste difference. I find some berries definitely sweeter than others, but can't uncover an obvious color link or reason for occasional fruits tasting sour.

Thimbleberry's specific name *parviflorus* translates as "small-flowered." The blossoms, however, may reach two inches across, making them among the largest-flowered in this genus. The alternate translation, "few in number," is a bit more accurate, as the herb has only three to five flowers per cluster. Fruits are thimble-shaped; I haven't been in thimbleberry areas when the berries were ripe so I don't have a first-hand flavor opinion. I hear contrary reports of palatability, ranging from "fabulous" to "ho-hum." I suspect flavor varies with soil and moisture conditions.

Harvest Calendar

Spring: tender shoots.
Late spring to summer: flowers and leaves.

Summer: fruits. (The fruits ripen early in lower coastal areas, later in midsummer higher in the mountains.)

Fall to spring: bark.

Food Use

Lilian Elvsaas of Seldovia, Alaska, says she peels tender salmonberry shoots and nibbles them as a trail snack. The spring growth is sweet in taste; shoots can be sautéed, stir-fried, or used as "veggie sticks" for dips. Thimbleberry shoots can be used in a similar manner.

Salmonberry and thimbleberry flowers can be added to salads. Fresh or thoroughly dried leaves are good ingredients in herbal teas. Fruits can be used for snacks or cereal topping; add to milkshakes, fruit pies, parfaits, and other desserts. I especially like salmonberries in Scandinavian Pancakes. This dish is ideal when you have company; you can enjoy your guests while the oven pancake bakes.

Medicinal Use

The bark and leaves of both salmonberries and thimbleberries have astringent properties. *Wild Edible and Medicinal Plants of California* recommends steeping one ounce dried thimbleberry root and bark in two cups water and taking a full wineglass dose frequently for diarrhea or dysentery. Since thimbleberry's range extends into Mexico, the remedy might be useful on your next southern vacation.

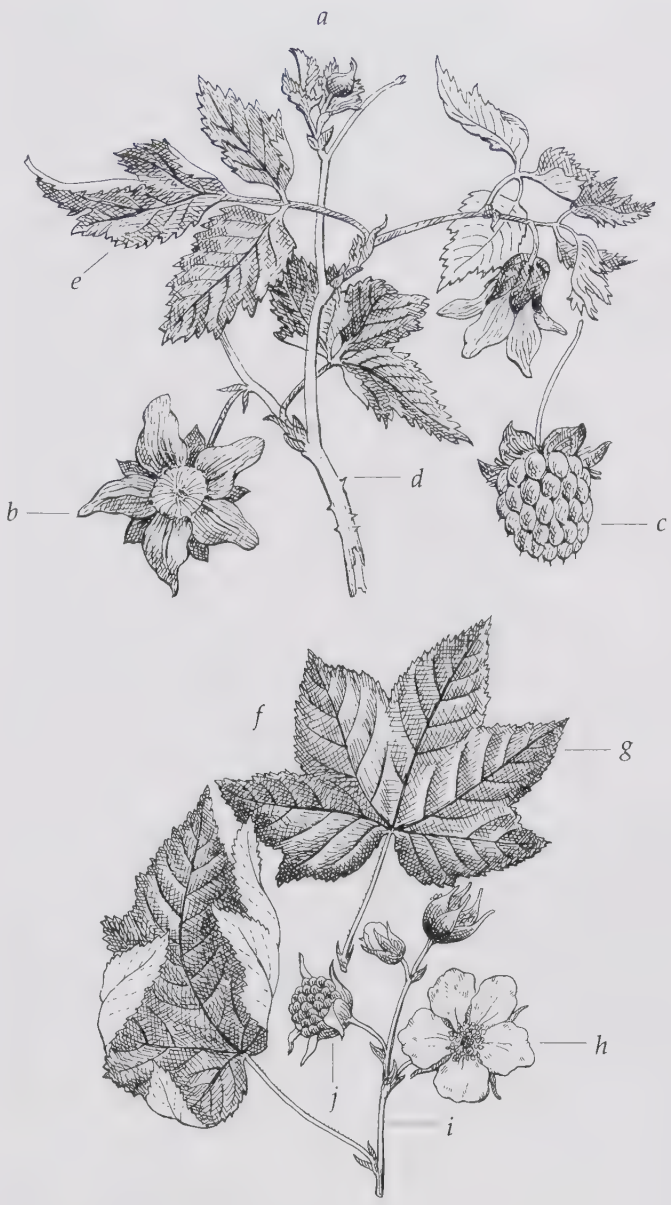
Cosmetic Use

Salmonberry and thimbleberry bark and leaves can be used in facial steams for oily skin. Add to herbal baths and hair rinses.

Historical Use

Explorers sipped salmonberry root and bark decoctions to cure intestinal ailments caused by overconsumption of salmon. Pounded bark was applied to aching teeth to relieve pain.

Salmonberry plants were a symbol of prestige among Indian tribes. *Food Plants of British Columbia Indians* reports that private individuals or families owned rights to harvest salmonberry patches. Boxes and boxes of the berries would be gathered by the females of the



Physical Description

SALMONBERRY: *Rubus spectabilis; a.* Shrub to 7 feet high. Often forms dense thickets; *b.* Flowers rich magenta color with 5 petals; *c.* Fruits are raspberrylike, red or orange at maturity; *d.* Spines on stem are weak; *e.* Leaflets have coarse teeth and are arranged in groups of 3.

THIMBLEBERRY: *Rubus parviflorus; f.* Shrub 2 to 8 feet high. Often forms dense thickets; *g.* Leaves are maplelike with 3 to 5 lobes and tissue-soft texture; *h.* White flowers with 5 petals, can be up to 2 inches across; *i.* Stems are smooth, free of prickles; *j.* Fruits are red, soft, thimble-shaped.

Scandinavian Pancake

6 tablespoons butter
6 large eggs
4 cups milk
6 tablespoons honey
1 teaspoon salt
1 cup whole wheat flour
2 cups berries

Melt butter in 8-by-12-inch baking pan. Set aside. In large bowl, beat all ingredients (except berries). Gently stir in fruits. Pour into baking pan. Bake at 450°F for 20 to 25 minutes. Serve drizzled with maple or birch syrup. Excellent for brunch, lunch, or supper! Serves 4.

household for winter use and salmonberry celebrations. After the second picking, feasts were held, and picking privileges would then be granted to the community at large.

There are many theories concerning the origin of salmonberry's common name. Some say it originates from the Chinook legend that instructed Coyote to place these berries in the mouth of each salmon he caught in order to insure continued good fishing. Others say the fruit's moniker is due to its color resemblance to salmon eggs. Certainly the salmon-hued drupelets with the salmon egg texture that often grow on the banks of salmon streams are well suited to their name, but like most common names, uncommon confusion can result. Alaskan Eskimos give the name salmonberry to the very different *R. chamaemorus* (called cloudberry in this text).

Thimbleberry was an important food source for many coastal Pacific Northwest Indians. Berries were dried into cakes, which were chipped and added to soups. Leaves served as protective covering for food dishes and as liners for cooking pits.

Other

Salmonberries, like raspberries, are a biennial. Only the second-year canes bear fruit and flowers. Salmonberries grow as far south as California; they are sometimes planted as an ornamental and edible.

Thimbleberries serve two additional functions. The shrubs (due to insect attack) often develop gall-like protuberances; these swollen stems are picked in winter and highly valued for their aesthetic touch in dried flower arrangements. Campers should be aware that thimbleberry's large soft leaves are a superior wilderness toilet paper!

Caution

When collecting salmonberry and thimbleberry leaves, be certain to use them immediately for tea, or to dry them well. When merely wilted, the leaves are mildly toxic.

TRAILING RASPBERRY (*Rubus pedatus*)
CLOUDBERRY (*Rubus chamaemorus*)
NAGOONBERRY (*Rubus arcticus*)

OTHER NAMES: five-leaved bramble (*R. pedatus*); salmonberry, knotberry, baked appleberry, *akpik*, ground mulberry (*R. chamaemorus*); wineberry, arctic raspberry, bramble dewberry (*R. arcticus*)

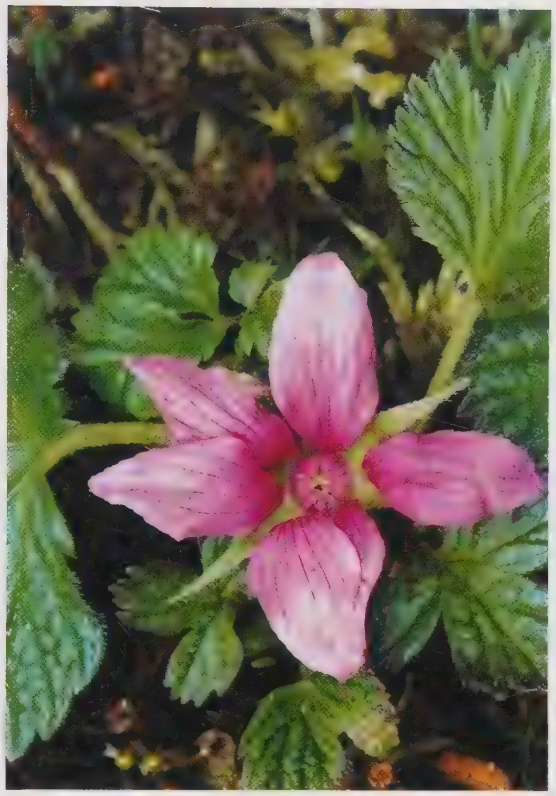
Rose Family (Rosaceae)

Habitat and Range

Trailing raspberry (*R. pedatus*) is a common ground cover in coniferous forests from the Alaska Peninsula and south-central and southeastern Alaska to southern Oregon.

Cloudberry (*R. chamaemorus*) inhabits bogs, tundra, and open forests from northern Alaska and the Yukon to Vancouver Island, British Columbia.

Nagoonberry (*R. arcticus*) grows in moist meadows, shady thickets, and stream banks from northern Alaska and the Yukon to British Columbia.



The pink flower petals of nagoonberry make a tasty snack and salad garnish.

Trailing Raspberry, Cloudberry, and Nagoonberry: *Rubus* Miniatures with Maximum Flavor

The *Rubus* genus is the subclassification of the rose family that includes such well-known fruits as raspberries and blackberries. Trailing raspberry, cloudberry, and nagoonberry are miniature *Rubus* members that are often overlooked. Their delectable fruits, however, make them well deserving of attention.

Trailing raspberry, *R. pedatus* (*pedatus*, meaning "having feet"), is a dwarf evergreen creeper, and a common ground cover in coastal forests. *R. chamaemorus* (*chamaemorus* translates as "ground mulberry") is generally called cloudberry in southern Alaska and salmonberry in northern areas. Since salmonberry is also a common name for the tall *R. spectabilis*, use of the botanical name is necessary to eliminate confusion!

Nagoonberry, *R. arcticus*, is a small species with pink blossoms, abundant from British Columbia northward.

After frost, trailing raspberry fruits become soft and sweet.

Cloudberry's hard red fruits turn plump, golden, and delicious at maturity.

Health Shake

1/2 cup trailing raspberries, cloudberries, and/or nagoonberries
1 cup nonfat milk
1 egg
1 tablespoon honey
1/2 teaspoon wheat germ oil
1/2 teaspoon liquid lecithin (optional)

Blend all ingredients in blender until frothy. This makes a great instant breakfast! Serves 1.

Harvest Calendar

Spring to winter: evergreen leaves of trailing raspberry.

Spring to summer: leaves of other species.

Late summer to fall: fruits.

Food Use

Trailing raspberry, cloudberry, and nagoonberry fruits are wonderful snacks and tasty additions to campfire pancakes and morning cereal. They make superior jams used alone or blended with more plentiful fruits (such as lingonberries and raspberries).

I'm especially fond of cloudberries whipped with yogurt; the dessert has a delightful orangelike flavor. In *Nauriat Nigiñaqtuat,* Anore Jones says *aqpiks* (the Inupiat name for *R.chamaemorus* fruits) are often mixed with oil and sugar and eaten after meals. For winter use, *aqpiks* are mixed with crowberries and dock leaves and stored in wooden kegs in cold cellars.

Flowers of all *Rubus* species can be added to salads as an edible garnish; the pink blossoms of nagoonberry, however, are extra sweet and delicous. I often nibble them while hiking. Nagoonberry fruits tend to be rock hard and unpalatable until cold weather arrives, sweetening and softening the fruits. The *Alaska Wild Berry Guide and Cookbook* reports nagoonberry fruits were sold by an Alaskan preserve company in the early 1970s for about $45 a pint! I especially like nagoonberries or other *Rubus* fruits added to milkshakes.

Rubus leaves, used fresh or dried, can be steeped for a pleasant tea. Use alone or in herbal tea blends. To add an extra fruity tang, mix with mashed dried berries. On winter ski excursions, I've gathered the evergreen leaves of trailing raspberry for a warming beverage.

Medicinal Use

A Yup'ik informant recommended drinking seedless cloudberry juice for hives.

Other

The miniature *Rubus* species make pleasing ground covers for shady portions of the home flower garden. Cloudberries favor moist areas; these hearty bog-lovers range from the Canadian Maritime Provinces and the mountains of Maine and New Hampshire to the peat bogs of Eurasia and the Arctic. In eastern Canada, one can find cloudberries for sale in the markets. Scandinavians export a highly popular cloudberry liqueur.

Caution

Rubus leaves are slightly toxic when wilted. Use fresh or completely dried for tea.

Physical Description

TRAILING RASPBERRY: *Rubus pedatus; a.* Grows to 3 inches high; *b.* Fruit is red with 1 to 6 drupelets; soft and tasty after frost; *c.* Single leaf with deep divisions gives the appearance of 5 leaflets; *d.* Flowers have 5 white petals; *e.* Thin, creeping runners.

CLOUDBERRY: *Rubus chamaemorus; f.* Grows 4 to 8 inches high.; *g.* Male and female flowers are on separate plants. Male flowers have dwarfed pistils; female flowers have dwarfed stamens; *h.* Flowers have 5 white petals; there is 1 flower per plant; *i.* Each plant has 1 to 3 leaves; *j.* Leaves are leathery; their overall shape is roundish. They are shallowly indented to form 5 lobes; *k.* Fruit is red when unripe, soft and golden at maturity; *l.* Stems are smooth.

NAGOONBERRY: *Rubus arcticus; m.* Grows to about 6 inches high; *n.* Fruit (botanically an aggregate) is made up of many drupelets; *o.* Subspecies hybridize frequently, making leaves quite variable. Leaves may have 3 lobes . . . ; *p.* . . . or be fully divided into 3 separate leaflets; *q.* Flowers have bright pink petals; petals are variable in number.

The spring shoot of twisted stalk *(left)* is tender and delicious. Be careful not to confuse it with the poisonous false hellebore *(right)*.

Twisted stalk flowers and fruits hang by stems with a distinctive kink.

TWISTED STALK (*Streptopus* species)

OTHER NAMES: white mandarin, wild cucumber, watermelon berry, liver berry, scoot berry (*S. amplexifolius*); rose mandarin, simple stemmed twisted stalk (*S. roseus*); small twisted stalk (*S. streptopoides*)

Lily Family (Liliaceae)

Habitat and Range

S. amplexifolius ranges from central Alaska and the Yukon southward to California. It has greenish-white, bell-like flowers that grow on sharply kinked stalks.

S. roseus has rose-colored, bell-like flowers on curved stalks. It grows from the Alaska Panhandle southward along the Coast Range to the Cascades in northern Oregon.

S. streptopoides has pink wheel-shaped flowers. This species is small, growing only to eight inches tall. It ranges from the Alaska Panhandle south to northwest Oregon.

All three species are edible and thrive in moist woods, river banks, and alder thickets.

Twisted Stalk: Cucumber Shoots and Watermelon Fruits

Twisted stalk offers double delight to foragers. Both the spring cucumber-flavored shoots and the summer watermelon-flavored fruits are excellent edibles. Oddly enough, this plant has virtually escaped mention in the flood of floral literature.

Bristol Bay Eskimos commonly eat this plant, yet many peoples, including the Dena'ina Athabascans of Cook Inlet, Alaska, avoid it as poisonous. Around Port Allsworth, Alaska, says JoAnn Nelson of Dillingham, twisted stalk fruits are referred to as "dead man's berries." Perhaps this reputation arose because the spring shoots are often mottled with red, a trait common in many notoriously deadly plants. Twisted stalk also belongs to the lily family, a beautiful group that includes the very poisonous death camass and false hellebore. *Streptopus*, however, is indeed safe and is a definite favorite in my household.

Harvest Calendar

Spring: young, succulent shoots.

Summer: plump red berries. Color deepens with age.

Food Use

Add chopped spring shoots to salads, or steam lightly as a vegetable side dish. Add to omelettes, casseroles, and soups. The shoots have a cucumberlike flavor and make a delicious trail snack. I especially like twisted stalk stir-fried with other vegetables. Vegetarians can enjoy the accompanying recipe as is; meat-lovers might wish to add diced chicken or beef in place of the tempeh.

The mature fruits of this plant, often referred to as watermelon berries, do have a refreshing watermelon flavor. I enjoy them often as a thirst-quenching trail nibble. The fruits are said to be somewhat laxative when eaten in excess. One of their nicknames is "scoot berries," as they're reported to send you scooting to the bathroom if you overindulge. I've never experienced this particular quality, but proceed slowly until you know how your particular system will react.

Berries can also be blended with other sweeter and more abundant fruits in jellies, jams, and desserts. *The Alaska Wild Berry Guide and Cookbook* gives a recipe for using dried watermelon berries in cookies.

Other

The botanical name *Streptopus amplexifolius* translates accurately and descriptively as the "clasping-leaved plant with the twisted stalk." This plant ranges through Eurasia and Greenland, and also occurs in the mountains of Arizona and North Carolina. It is easy to grow in wild gardens.

Caution

Spring shoots of twisted stalk have been confused with the deadly spring growth of false hellebore (*Veratrum* species). Shoots of hellebore are plump, pleated, and uniformly green in appearance. Twisted stalk shoots often show pinkish tinges and purple spots. Be positive of identity as reddish tinges are also common to poison hemlock (*Cicuta* species), though the growth form is quite different.

Vegetarian Spring Sauté

1 cup chopped twisted stalk shoots
1 cup cleaned fiddleheads
1 cup chopped nettles
1 cup finely chopped chickweed
2 tablespoons chopped sorrel
2 cups cubed tempeh
3 tablespoons sesame oil
Soy sauce to taste
6 cups cooked rice

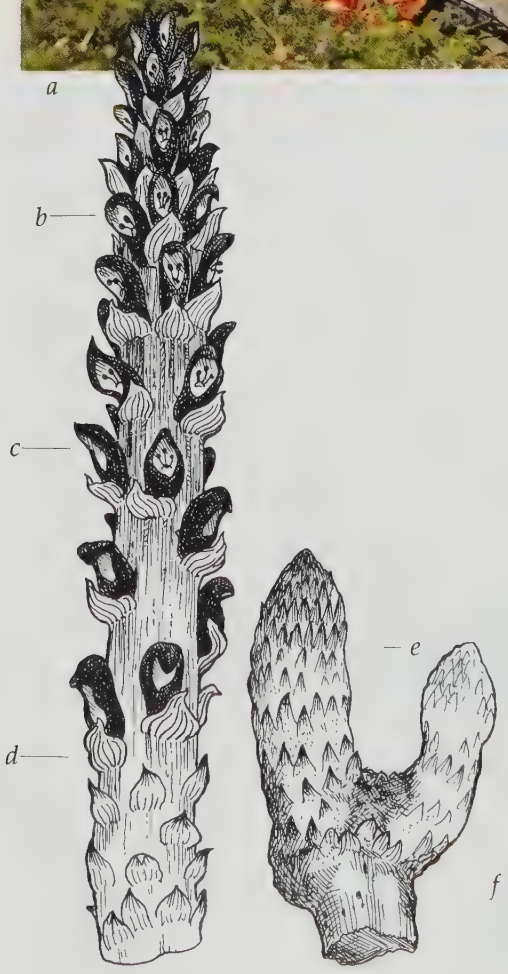
Sauté greens and tempeh in oil in a wok. Vegetables should be cooked quickly to retain their crispness. Add soy sauce and serve on cooked rice. Serves 3 to 4.

Physical Description

TWISTED STALK: *Streptopus* species; *a*. Grows to 3 feet high at maturity; *b*. Stems have a distinctive twist; *c*. Leaves have parallel veins; *d*. Flowers are greenish-white on *S. amplexifolius*, pink to purple on other species; *e*. Flowers are bell-like with petals that curve back (except *S. streptopoides*, which has flatter, wheel-like flowers); *f*. Young spring shoots have cucumber flavor; *g*. Young shoots are often tinged with red splotches. (This trait is common in many poisonous plants. Twisted stalk shoots, however, are safe and delicious.); *h*. Berries are red and juicy, with many seeds.

Woodland Plants without Berrylike Fruits

Though flowering plants, *B. rossica* and the other broomrapes are curious in that they lack chlorophyll and obtain their nourishment parasitically.



BROOMRAPE (*Boschniakia* and *Orobanche* species)

OTHER NAMES: poque, ghost plant, cancer root (*Boschniakia* species); northern ground cone (*B. rossica*); Vancouver ground cone (*B. Hookeri*)

Broomrape Family (Orobanchaceae)

Habitat and Range

B. rossica, which is parasitic on the roots of the alder, *Alnus crispa*, ranges from northern Alaska and the Yukon to British Columbia.

The similar *B. Hookeri*, which is parasitic on salal, *Gaultheria shallon*, ranges from British Columbia to California.

B. strobilacea, which ranges from southern Oregon to California, is parasitic on *Arctostaphylos* and *Arbutus*.

Orobanche species distributed in our region include *O. uniflora* and *O. grayana* (British Columbia to California), and *O. pinorum* (Washington to California). *O. fasciculata* is another species occurring rarely in Alaska and the Yukon and more commonly southward to California.

Broomrape: Flowering Plant Lacking Chlorophyll

Though botanical names aren't commonly tossed about, my friend, Mairiis, has a special fondness for *Boschniakia rossica*, and the way it rolls on the tongue. It sounds like a person's name, and indeed it is; the plant is named in honor of the Russian botanist A. K. Boschniak.

Physical Description

BROOMRAPE: *Boschniakia rossica* (illustrated); *a*. Grows to about 10 inches; *b*. Broomrape's tubular flowers are 2-lipped and brownish red in color. Upper lip of flower is keeled; the lower lip is short; *c*. Plant lacks chlorophyll and has brownish-maroon color. Broomrape is parasitic on alder roots; *d*. Leaves are scalelike; *e*. Young growth of spring; *f*. NOTE: *O. uniflora* bears a single purple flower atop a short stem. Whitish stems with numerous flowers are characteristic of *O. grayana*. Other species are quite similar. Hosts vary from *Grindelia* to *Artemisia*.

Broomrape's uniqueness extends far beyond its name. In appearance, it resembles an overgrown spruce cone, standing at attention under a leafy canopy. Its common name refers to the fact that some species extract nourishment from broom plants (*Cytisus* genus); other species-specific hosts include *Alnus, Arctostaphylos,* and *Arbutus.* The common name, broomrape, also refers to plants in the *Orobanche* genus; these, too, lack chlorophyll and affiliate themselves with host plants.

Harvest Calendar

Spring and fall: whole herb. (Harvest selectively. Broomrape isn't overly abundant so gather only one out of every ten plants. If you collect any underground portions, be certain to gather from those farthest from the host plant so that you don't disrupt broomrape's source of nourishment. Since broomrape spoils easily, collected plants should be well dried to preserve for medicinal use.)

Food Use

Broomrape, like cow parsnip roots, are reputed to be a tasty wild food. But so far, it's been a failure in my field taste trials. Though the whole plant is said to be edible, the underground portion is what is most commonly eaten, either raw or roasted on campfire coals.

Medicinal Use

I use *Boschniakia* as an ingredient in tonic drinks (with dandelion root and nettle), and in stress-relieving teas like Quiet Times.

Plants of the *Orobanche* genus can also be substituted. *Medicinal Plants of the Mountain West* recommends boiling a teaspoon of the rootstalk in a cup of water and drinking this when you need a laxative or sedative, or a tonic drink for restoring strength after a long illness or mild stroke. Moore says an average dose is a "... scant to rounded teaspoon boiled in water, one to two cups a day."

Cosmetic Use

Jeanne Rose's *The Herbal Body Book* reports that broomrape juice (obtained from an *Orobanche* species) has been used for removing freckles and skin blemishes. The flowering stalk of *Boschniakia* can be added to facial steams for oily skin.

Quiet Times Tea

1 part broomrape (rootstock)
2 parts valerian (the whole herb)
3 parts pineapple weed (flowers)

Gather herbs and dry well. Place dry herbs in blender and grind coarsely. Store in a glass jar in a dark cupboard. Pour 1 cup boiling water over 1 heaping teaspoon tea. Steep 5 to 10 minutes. Strain and serve. Sip slowly; this is a soothing drink for a stressful day.

Historical Use

Various members of the broomrape family have been used in China as aphrodisiacs. According to folklore, the phallic plants sprang up from the semen dropped by dragons and wild stallions. Broomrape is still prescribed in China for male impotence and female infertility, as well as for menopausal hot flashes.

Other

Broomrape's family name, Orobanchaceae, comes from the Greek *orogos* (a clinging plant) and *acho* (to strangle). There are nearly two hundred broomrape species worldwide; all are herbaceous parasites.

Kari says the Dena'ina Athabascans place broomrape necklaces on babies and puppies "... to help them grow right." The Inland Dena'ina use the white inner portion of broomrape to make pipes. The thick underground portion is cooked as a food by Lime villagers.

The flowering stem of chiming bells elongates. Flowers are bell-shaped. (Norma W. Dudiak)

Oysterleaf, a common Alaskan beach plant, has edible oyster-flavored leaves.

CHIMING BELLS (*Mertensia paniculata*)
OYSTERLEAF (*Mertensia maritima*)

OTHER NAMES: lungwort, mountain bluebells (*M. paniculata*); oyster plant (*M. maritima*)

Borage Family (Boraginaceae)

Habitat and Range

Chiming bells favors woods, moist meadows, riverbanks, dry slopes, and burn areas. Oysterleaf inhabits sandy beaches and gravel shores.

Chiming bells, *M. paniculata*, ranges from the Brooks Range and the northern Yukon to central Oregon. The similar *M. oblongifolia* and *M. longiflora* range from southern British Columbia to California.

Oysterleaf, *M. maritima*, ranges coastally from the northern shores of Alaska and the Yukon to southeast Alaska. It also occurs in British Columbia.

Other species of interest include *M. bella* and *M. ciliata* (Washington to California).

Chiming Bells and Oysterleaf: Unappreciated Edibles

Awesome — although it's a word often overused, it's appropriate to describe my encounter with chiming bells in the Alaskan Interior. The setting was the desolate aftermath of a forest fire. Spruce and birch were charred and lifeless. The eye-level scene was one of overwhelming despair and desolation, yet the forest floor was an awe-inspiring carpet of color. Fireweed was, as expected, present in abundance, but it was the endless clusters of chiming bells that rang a joyful song of renewal. "Joy in physical existence" is, in fact, a primary characteristic of the Alaskan Flower Essence of chiming bells. (See Flower Essence section at back of book.)

Harvest Calendar

Spring to early summer: leaves.
Summer: flowers.

Food Use

Since the *Mertensias* are in the borage family, it shouldn't be surprising that they are edible.

Beach Brunch

4 eggs, beaten
1/4 cup crabmeat
1/4 cup chopped oysterleaf
2 tablespoons butter
2 bagels, split

Scramble first 3 ingredients in melted butter until eggs are set. Spread on bagels and enjoy. Serves 2.

Yet they've virtually escaped mention in the flood of floral lore. I first learned of their food usage from forager Eleanor Viereck of Fairbanks, Alaska. Viereck regularly nibbles the flowers as trail snacks and adds them to salads. Though the leaves are mediocre as salad greens (due to their hairy texture), they are quite acceptable chopped and added to soups and casseroles. In addition, dried leaves are a pleasant addition to herbal tea blends.

As oysterleaf's common name indicates, this plant has a characteristic oyster flavor. Add the pleasant-textured leaves to salads, as well as chowders, bisques, vegetable pies, quiches, and casseroles. They blend especially well with eggs.

Medicinal Use

The Audubon Society Field Guide to North American Wildflowers notes that the *Mertensias* are dubbed lungwort ". . . after a European species with spotted leaves which was believed to be a remedy for lung disease." To date, I have not been able to obtain any additional documentation of *Mertensia*'s medicinal use.

Other

The name *Mertensia* honors German botanist Franz Karl Mertens. The specific *paniculata* refers to the arrangement of chiming bell flowers, i.e., in panicles; *maritima* refers to the maritime habitat of oysterleaf.

During the first year of growth, chiming bell produces roundish basal leaves with long stalks (petioles). *Wild Flowers of the Pacific Northwest* says that "many observers have been confused by the very different leaves of the flowering plant, for they are entirely cauline, without petioles, and oblong to obovate."

In Scotland, oysterleaf is now endangered by grazing sheep, who overenthusiastically mow the plant to the ground. I liken proper picking to pruning, and advise human harvesters to "browse" leaves from various plants.

Physical Description

CHIMING BELLS: *Mertensia paniculata; a.* Grows to 3 feet high; *b.* Flowers are bell-shaped; pinkish in bud, become blue (rarely white) when open; *c.* The pistil projects beyond the flower petals (corolla); *d. M. paniculata* variation *paniculata* has leaves rough-hairy on both sides. Variation *alaskana* and *Eastwoodae* have leaves smooth on the underside; *e.* Basal leaves have long stalks (petioles); *f.* Stem leaves lack a stalk (sessile), and are reduced in size. Leaves alternate on the stem; at the very top of the stem, leaves are so close together that they appear opposite.

OYSTERLEAF: *Mertensia maritima; g.* Plant low-growing, to about 8 inches high; *h.* Stem trails on ground with tip rising at the end (decumbent); *i.* Flower petals change from pink to blue with age (rarely white); *j.* Buds are pink and sepals are purple; *k.* Leaves are smooth with bluish-gray tinge; *l.* Grows on sandy beaches and gravel shores, forming large flat mats, but often inconspicuous against varicolored pebbles or sand.

Creeping Jennie, *L. complanatum*, is traditional in herbal preparations for cirrhosis of the liver. (Norma W. Dudiak)

CLUB MOSS (*Lycopodium* species)

OTHER NAMES: stiff club moss (*L. annotinum*); common club moss, vegetable sulfur, wolf's claw, staghorn, lycopod, (*L. clavatum*); creeping Jennie, American ground pine, American club moss (*L. complanatum*)

Club Moss Family (Lycopodiaceae)

Habitat and Range

Coniferous woods and rocky places are common habitats for club moss.

L. annotinum ranges from northern Alaska and the Yukon to British Columbia, and south to northeast Oregon.

L. clavatum ranges from northern Alaska and the Yukon to California.

L. complanatum ranges from central Alaska and the Yukon to Washington.

L. selago (Alaska and the Yukon to Oregon) is a toxic species.

NOTE: A number of other *Lycopodium* species also range throughout the Northwest. For internal use, species identification is crucial and medical supervision is advised.

Club Moss: Dye Assistant and Pillow Stuffing

If you stepped back in time some 280 million years, you would find the earth's vegetation dominated by towering club moss plants the size of trees. Today's club moss is a diminutive evergreen ground cover, common in the coniferous forests of the world. The Carboniferous period survivor also frequents the tropics, where it grows on other plants in a nonparasitic manner.

Despite its name, club moss is not related to moss. It is a vascular plant, equipped with a cellular network to transport water and nutrients through its tissues. Unlike the flowering plants, however, club moss reproduces primitively through spores. In northern regions, this spore-bearing evergreen is often used for Christmas wreaths and decorations.

Harvest Calendar

Summer: spore-capsules and evergreen branches. Club moss can be harvested year-round, snow cover permitting.

Food Use

Club moss has no reported food use. As a tea, it is strictly for medicinal use.

Medicinal Use

The reproductive capsules borne at the top of *L. clavatum* and *L. complanatum* yield a yellow powder called "vegetable sulfur" or "vegetable brimstone." This powder is sprinkled on skin sores, eczema, herpes, and supperating skin irritations. It is often used for diaper rash because the powder is soothing and healing. In addition, it contains a waxy substance that is extremely water repellent. It is reported that if you coat your hand with club moss powder and submerge it in water, it will remain completely dry. (If only modern technology could impregnate Northwest rain gear with this substance!)

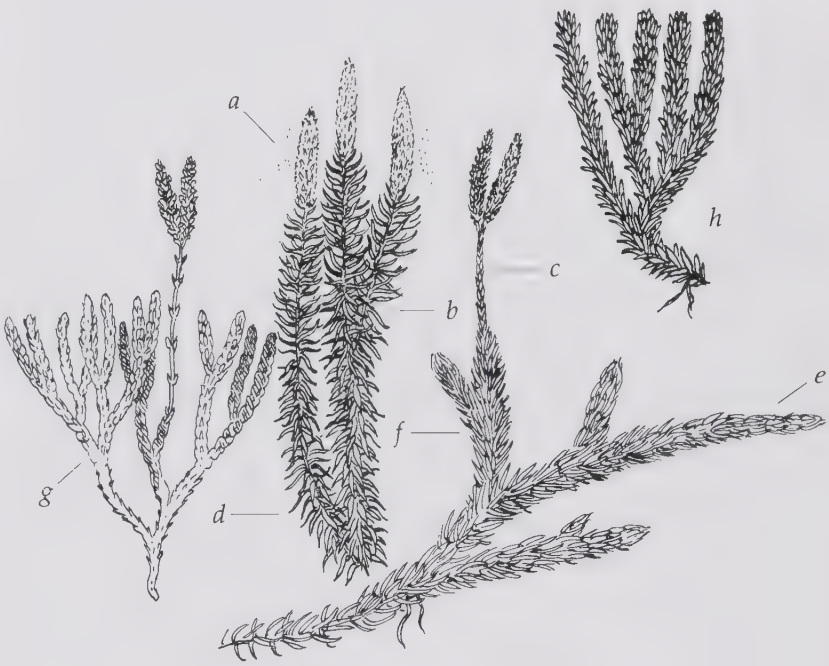
The friction-reducing powder is frequently used as a dusting powder for condoms, as a pharmaceutical aid to prevent pills from sticking together, and as a body powder for the bedridden. Since this substance is highly flammable (one of its traditional uses was for bright lights for nighttime photographers and theatrical explosives), don't allow club moss-coated convalescents to smoke in bed!

The club moss plant itself is highly recommended by European herbalist Maria Treben for leg cramps. In *Health Through God's Pharmacy*, she advocates pillows stuffed with the herb as an external application on aching areas. "For cramps in the leg," says Treben, "the club moss is placed in a cloth and tied around the calf." When my father, Jean Desclos, hiked to my remote Alaskan home, I made him a pillow for his tired feet.

Dad's Pillow

2 cups dried club moss greens
2 cups dried wormwood leaves and flowers
1 cup dried pineapple weed flowers and greens
Old pillowcase

Place herbs in pillowcase. Prop tired or cramped feet on the pillow on a hassock or stool. Sit back and enjoy. Elevate feet nightly for 30 minutes, resting them on the club moss pillow.



Physical Description

CLUB MOSS: *Lycopodium* species; *a. L. annotinum* has spore-bearing tops that attach directly to the stems without a stalk; *b. L. annotinum*, subspecies *annotinum* (illustrated) has spreading leaves that make the plant stiff to touch, hence the common name "stiff club moss." Subspecies *pungens* has more yellowish leaves that are pressed closer to the stem; *c. L. clavatum*, subspecies *clavatum*, has branches that end with an unusually long stalk (peduncle) topped by 2 to 3 spore-bearing tops. Subspecies *monostachyon* has only 1 spore-bearing top per branch and may have short stalks; *d.* Leaves (microphylls) are stiff, awl-shaped, and toothed; *e.* Long, trailing stem (to 9 feet long) is densely covered with short leaves pressed close to the stem; *f.* Ascending branches of *L. clavatum* fork readily, have soft texture; *g. L. complanatum* has erect, forked, obviously flattened branches. Leaves are in 4 rows. Species from southern areas have 1 spore top on fertile branches rather than 2; *h. L. selago* is a toxic species. Its branches are arranged in pairs that reach the same height. In addition, its spore-bearing structures (sporangia) are located in the leaf axils. (Other species have spore-bearing structures in a spike at the top of the stem.)

When Dad tried resting his head on the pillow, he experienced many vivid dreams. Laying club moss on your head is a Dena'ina remedy for headache. The Dena'ina also use tea made from the boiled plant for an eyewash.

Club moss (species *L. clavatum* and *L. complanatum* ONLY) is a traditional internal remedy for cirrhosis of the liver, urinary and reproductive disorders, and gout and rheumatism. Author Maria Treben suggests club moss tea be sipped each day before breakfast: recommended dose is one teaspoon chopped club moss infused in one cup of boiling water. "For cirrhosis and malignant diseases of the liver, two cups are drunk daily."

Ed Berg of Homer, Alaska, reports that *Lycopodium* is widely used as a homeopathic remedy for chronic disease. "It is most characteristically used," says Berg, "for those suffering with great fears of inadequacy." (See Homeopathy section at the back of the book.)

Stiff club moss (*L. annotinum*) is often used in Christmas decorations, as well as foot pillows.

Historical Use

Montagnais Indians, according to *Earth Medicine, Earth Foods*, blended club moss with hemlock tree bark for a fever-reducing tea. Potawatomi and Blackfoot tribes dusted wounds with club moss powder and inhaled the golden dust for nosebleeds.

Seventeenth-century physicians administered club moss decoctions for nervous spasms and dropsy. From 1863 to 1947, *L. clavatum* was listed as one of the official drugs of the *United States Pharmacopoeia*. The tincture was prescribed for bladder irritability and the powder used to absorb fluids from injured tissue.

Other

The *Lycopodium* genus, reports *Hortus Third*, includes some four hundred fifty perennial evergreen species of wide distribution. *L. clavatum* and *L. complanatum*, the only two species recorded for internal medicinal use, are common plants in coniferous forests of North America, Europe, and Asia. They are sometimes cultivated in moist, shady places.

Any club moss species may be experimented with as a dye assistant (mordant) to fix colors for natural dyeing. (See Alum Root section for mordant directions.)

Caution

Species identification is extremely important; *L. selago* should NOT be used internally. It contains an alkaloid that can cause mouth pain, diarrhea, and vomiting. Some Western Indian tribes are reported to have chewed *L. selago* stems for the intoxicating effects. Unconsciousness resulted from chewing as few as eight stems.

Medical supervision is recommended even for internal use of approved species. Maria Treben warns that "people who suffer from diarrhea should use the tea only with the greatest caution as cramps in the intestines could result."

FERNS:
LADY FERN (*Athyrium filix-femina*)
OSTRICH FERN (*Matteuccia struthiopteris*)
SHIELD FERN (*Dryopteris dilatata*)

OTHER NAMES: trailing wood fern (*D. dilatata*)

Lady Fern Family (Athyriaceae)
Shield Fern Family (Aspidiaceae)

Habitat and Range

Fern habitat varies from moist woods and lowlands to stream banks.

Lady fern (*Athyrium filix-femina*) ranges from central Alaska and the Yukon to California. Ostrich fern (*Matteuccia struthiopteris*) ranges from central Alaska to British Columbia. Shield fern (*Dryopteris dilatata*) ranges from west-central Alaska and the southeast Yukon to California.

Fiddlehead Ferns: Favorite Spring Green

Fiddleheads are a food source with which beginning foragers quickly become acquainted. The coiled spring clusters, said to resemble a fiddle's head, are both easy to recognize and easy to like. "Croziers" is another common nickname, springing from the young plant's resemblance to the shape of a bishop's staff.

Fiddleheads of lady, ostrich, and shield fern are popularly gathered in the Pacific Northwest. It's said that any fern of sufficient size and palatability can be consumed, but one exception is bracken fern (*Pteridium aquilinum*). Ferns of bracken, which tend toward more solitary growth, are distributed from the Alaska Panhandle to California. Bracken has been included in many field guides as an edible; it is currently suspected of causing stomach cancer.

Harvest Calendar

Spring: tightly coiled fiddleheads.

NOTE: I've gathered these in fall and winter also, as they are formed by the plant as the foliage dies back and lie just below the surface.

Fall or early spring: underground rootstalk.

Lady fern has fronds that are narrow at the top and base, and broad in the middle. (Verna Pratt)

Ostrich fern has two growth forms: a green sterile frond and a central fertile frond that turns brown with age. The entire plant is symmetrical and vaselike in form.

Shield fern fiddleheads have brown, flaky coatings that should be discarded before cooking.

Food Use

Fiddleheads should always be served cooked because they contain thiaminase, a vitamin B-depleting enzyme. Heat destroys this enzyme and renders the fiddleheads safe for consumption.

The problem with fiddleheads is their flaky coating. I like to pick this covering from fiddleheads while in the field; doing it with a meditative spirit on a "sun-sational" spring morning reduces the tedium. Some foragers prefer placing the scruffy fiddleheads in a strainer and flushing them repeatedly with water, a technique I've found only moderately successful. Rubbing them briskly in a towel is another cleaning method. Ostrich fern fiddleheads are considered choice due to their excellent flavor and nearly naked (of fuzz) croziers.

Cream of fiddlehead soup and fiddlehead tempura are two of my favorite fern dishes. Fiddleheads can also be served as a potherb (topped with garlic butter or cheese sauce) or added to omelettes, casseroles, stir-fries, and spaghetti sauce. Use fiddleheads on pizza. Toss cooked chilled croziers in spring salads. The accompanying recipe makes a wonderful hors d'oeuvre or side dish.

Marinated Fiddleheads

Contributed by Marina Schaum of Fritz Creek, Alaska

4 cups cleaned fiddleheads
12 ounces wine vinegar
5 tablespoons pickling spice
1 cup molasses
2 teaspoons white pepper
1 cup oil
1 clove garlic
1 teaspoon onion powder

Steam fiddleheads 3 to 5 minutes. Drain and set aside in gallon glass jar or ceramic crock. Place vinegar, pickling spice, molasses, white pepper, oil, garlic, and onion powder in a stainless steel pan and bring to a boil. Pour vinegar mixture over fiddleheads and let stand for 2 to 3 days. Strain and serve. Serves 4 to 6.

Fiddleheads are high in iron, potassium, and vitamins A, B, and C. To preserve a quantity of these nutritious vegetables for winter, blanch the cleaned fiddleheads in boiling water for one minute. Drain and transfer to zip closure bags or plastic containers. Fiddleheads can also be canned, pickled, or dried.

If you prefer fresh vegetables, you can follow Susan Shaffer's techniques for extending the fiddlehead season. In the May 1985 *Spore Print* (published by the Alaska Mycological Society), Shaffer writes, "I can keep a supply of fiddleheads going all summer by finding a good clump of ferns and cutting them off from time to time. This will force the plant to make fiddleheads even though it is not fall." Fiddleheads can also be dug in autumn and spring (and sometimes through the snow!) as they lie coiled below the surface waiting for warm weather.

Another fern food source is the underground stem. Bristol Bay Eskimos and Southeastern Indians commonly eat the roasted, peeled rootstocks. In Japan, a starch is extracted from the rootstocks and used in making pastries. Rhizomes are also utilized in beermaking.

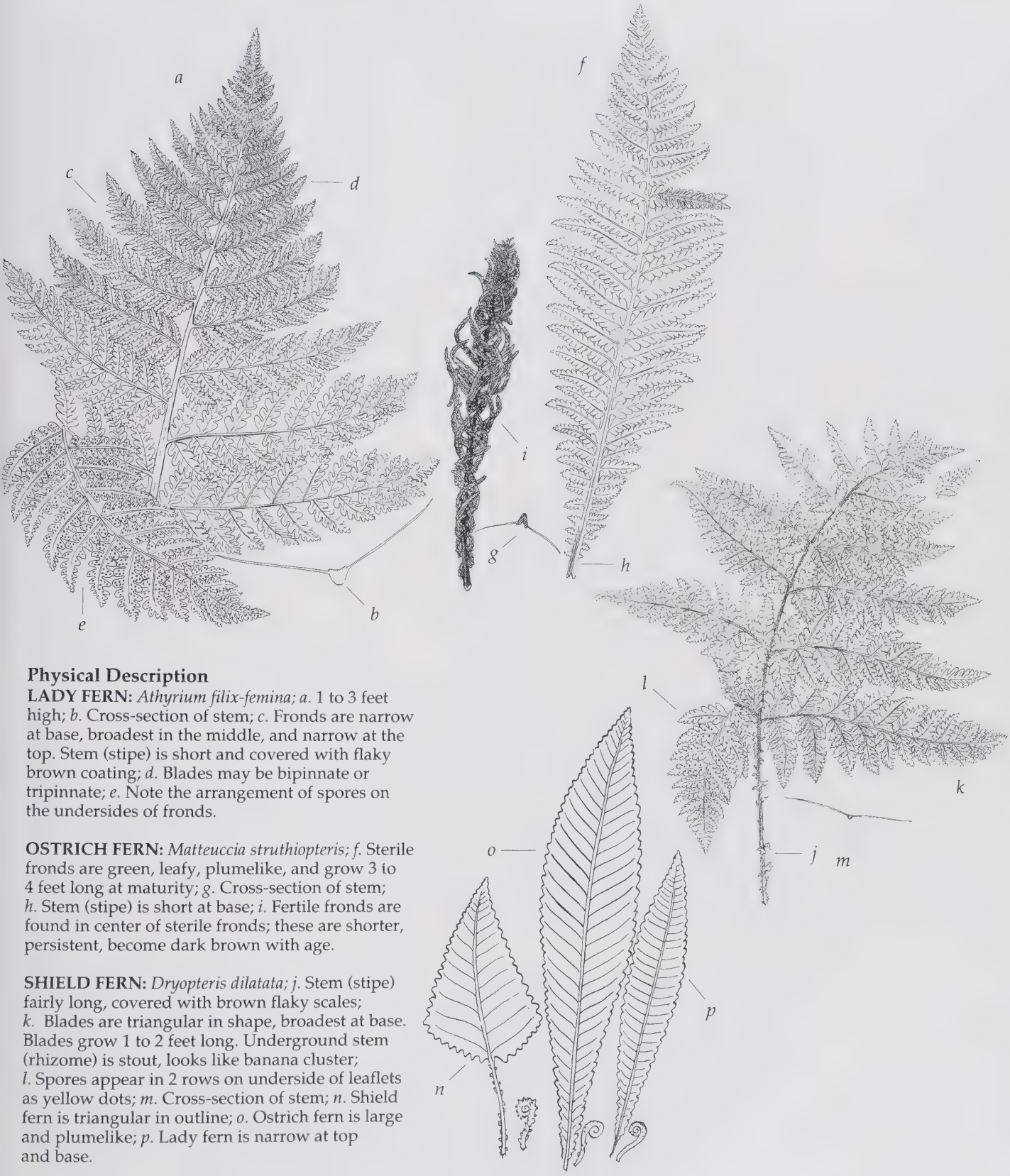
Medicinal Use

The shield fern rhizome, prepared as an oil extract, is a traditional remedy taken for expelling tapeworms. This effective vermifuge has been in use from Greek and Roman civilization to the computer age. Medical supervision, however, is strongly advised: overdoses can spark side effects ranging from nausea to blindness.

The scruffy fiddlehead coating can be rubbed on nettle rash to reduce itching and redness. (I find mashed nettles, however, the most effective treatment for this condition.)

Cosmetic Use

Shield fern frond infusion is an ancient beauty treatment for the hair; it's said to rid the scalp of dandruff and to make the hair shiny. Rootstock decoctions have been used in footbaths for varicose veins. Legend says bathing in the mixture will heighten sexual desire.



Physical Description

LADY FERN: *Athyrium filix-femina; a.* 1 to 3 feet high; *b.* Cross-section of stem; *c.* Fronds are narrow at base, broadest in the middle, and narrow at the top. Stem (stipe) is short and covered with flaky brown coating; *d.* Blades may be bipinnate or tripinnate; *e.* Note the arrangement of spores on the undersides of fronds.

OSTRICH FERN: *Matteuccia struthiopteris; f.* Sterile fronds are green, leafy, plumelike, and grow 3 to 4 feet long at maturity; *g.* Cross-section of stem; *h.* Stem (stipe) is short at base; *i.* Fertile fronds are found in center of sterile fronds; these are shorter, persistent, become dark brown with age.

SHIELD FERN: *Dryopteris dilatata; j.* Stem (stipe) fairly long, covered with brown flaky scales; *k.* Blades are triangular in shape, broadest at base. Blades grow 1 to 2 feet long. Underground stem (rhizome) is stout, looks like banana cluster; *l.* Spores appear in 2 rows on underside of leaflets as yellow dots; *m.* Cross-section of stem; *n.* Shield fern is triangular in outline; *o.* Ostrich fern is large and plumelike; *p.* Lady fern is narrow at top and base.

Historical Use

In *The Herb Book,* Lust reports that shield fern fronds were once commonly sewn into linen bags and used as an external application for relieving rheumatic pains. In the Middle Ages, shield fern was used as a good luck charm. The bananalike rhizome, called "lucky hand," was smoked in summer solstice fires as a powerful charm; Lust says this was a favorite of Genghis Khan. Fern fronds have been used to wipe down fish, to cover food, to thatch roofs, and to supply mattress stuffing. Indigestible portions of the rhizomes were used as tinder. American Indian braves often ate fiddleheads in the belief that, when hunting, this would mask their scent. Commercially, fronds have been used in cushioning fruit and other goods for shipping, and in dyeing cloth. Culpeper wrote that burning fern fronds would repel "serpents, gnats, and other noisome creatures."

Other

Fern fronds compost quickly and add valuable nutrients to the soil. They also make good mulch and livestock bedding. Young bracken ferns are often gathered, sun dried, and burned as a potash supplement.

Botanically, ferns are remnants of tree-sized plants that once dominated the earth's flora. The dots seen on the underside of the summer fronds are not a fungal disease but rather the fern's reproductive spores (sori). At one time it was believed that those who collected the minute spores and carried them in their pockets would "walk invisible." Today, a fern spore bank is run by the American Fern Society (c/o Neill Hall, 1230 N.E. 88th Street, Seattle, Washington 98115); members can obtain spores to diversify their collections of fern houseplants.

Those who wish to study northwestern ferns in more depth might wish to investigate the following species:

Bracken fern (*Pteridium aquilinum*) — bracken fiddleheads have been used extensively for food, but are currently linked to stomach cancer in Japan, and should probably be avoided until research is complete. Bracken ashes have been used to make glass and soap. The plant's powdered rootstock was once prescribed for disorders of the spleen and to treat rickets in children.

Fragile fern (*Cystopteris* species) — the rhizome has been used as an emergency food source.

Licorice fern (*Polypodium vulgare*) — its licorice-flavored rootstock is an old remedy for measles and colds. The rhizome has been chewed for sore throat and to freshen the breath.

Maidenhair fern (*Adiantum pedatum*) — the leaflets have been chewed for internal bleeding. Frond infusions are a traditional hair treatment. The dark stem (stipe) often appears in native basketry.

Sword fern (*Polystichum munitum*) — mashed leaves have served as poultice for boils. Spores were used for treating burns and decocted rhizomes for dandruff. Fronds make a good liner for campfire baking.

Caution

Collect fiddleheads only when fully coiled and about six to eight inches high. Cook before serving to destroy the thiaminase enzyme (that depletes vitamin B supplies in the body). Don't eat mature fronds, as they become toxic with age and are linked to livestock poisonings.

FUNGI:
PUFFBALLS (*Lycoperdon* and *Calvatia* species)
SULFUR SHELF (*Laetiporus sulphureus*, also known as *Polyporus sulphureus*)
BEAR'S HEAD (*Hericium* species)
HEDGEHOG (*Dentinum repandum*, also known as *Hydnum repandum*)

OTHER NAMES: devil's snuffbox (*Lycoperdon* species); chicken of the woods, chicken polypore (*Laetiporus sulphureus*); satyr's beard, coral hydnum (*Hericium* species)

Habitat and Range

Puffballs flourish from lawns and meadows to roadsides and tundra. Sulfur shelf and bear's head grow on trees. Hedgehogs frequent floors of coniferous forests.

Puffballs, sulfur shelf, bear's head, and hedgehog all range from Alaska to California. Tree hosts for sulfur shelf vary from spruce and eucalyptus to oak. Balsam poplar, birch, maple, and beech are popular host trees for bear's head.

Puffballs should always be sliced in half and examined. The lower white *Lycoperdon* puffball is prime for consumption; the upper brown specimen is too old to eat.

Sulfur shelf is velvety and bright orange with yellow undersides when prime. It is always found growing on trees or stumps.

Puffballs, Sulfur Shelf, Bear's Head, and Hedgehog: Four Distinctive Edible Fungi

Fear of fungi was once common due to the association of mushrooms and toadstools with demons and dung, witches and toads, and things forbidden and mysterious. Fortunately, knowledge and acceptance of things mycological (from the Greek *mykes* for "fungus") have replaced such archaic attitudes. Mycology clubs, seminars, and field guides actively publicize the "fun of fungi" and the gourmet eating mushroom foragers can enjoy. (See the Herb Directory in the back of the book for lists of both national and state mycology associations.)

Puffballs, sulfur shelf, bear's head, and hedgehog are good to start with if you're a novice mushroom collector. All four are exceptionally distinctive and highly edible.

As you pick fungi to take home for identification, do remember to keep different species wrapped in wax paper and totally separate from each other in your collecting basket (unless you are positive all are edible). Spores of one toxic mushroom can contaminate your safe species. When collecting, I like to cut the mushroom stems about one inch from the ground to keep specimens free of dirt; this also prevents disturbing the network of underground fungal threads (mycelia).

Positive identification is the only foolproof method. To make mushroom spore prints for keying new species, discard the stem and place

Close-up of bear's head reveals detail of the teeth.

Hedgehog fungi have distinctive teeth instead of gills. *Dentinum repandum* is a choice, mild-flavored species with smooth caps.

the mushroom cap stem side down on paper. Cover the cap with a glass bowl or large container, and let it sit overnight. It is best to place half of the cap on dark paper, with the other half on light paper so that the spores will show up well regardless of their color. Spores will form a distinctive print; spore color and shape (key identifiers) will be evident.

Don't eat a large portion when consuming a wild mushroom for the first time. Eat no more than one tablespoon of the cooked fungus and then wait at least thirty-six hours to make certain you have no allergic reactions. Though a dose of respect is especially appropriate with fungi, foragers shouldn't hesitate to begin knowledgeably adding wild mushrooms to their cuisine. Besides adding flavor to meals, fungi add vitamins B, D, and K, and minerals copper and iron.

Harvest Calendar

Late summer to early fall. (Some mushrooms, such as morels, are specific to spring.)

Food Use

Large puffballs are delectable when sliced and cooked like eggplant Parmesan. Try them filled with bread stuffing, wrapped in bacon, and cooked in a covered pot. Marble-sized *Lycoperdon* puffballs are common in August in the hard-packed gravel road near my home; I like them best sautéed in butter, garlic, and soy sauce and served on toast points.

When weather extended a Gulf Coast camping trip beyond allotted food supplies, the bright orange sulfur shelf fungi dotting the rain forest spruce helped brighten meals for me and five other hungry hikers. We enjoyed sulfur shelf soups and stews, as well as the classic favorite of Barbara McBride of Homer, Alaska. McBride cuts the tender edges of sulfur shelf, dips them in egg batter and cracker crumbs, and fries them in oil. This chicken-flavored treat is quite popular with her family and guests.

The Mushroom Handbook recommends parboiling sulfur shelf, and then tossing the cooled cooked fungi with shrimp and French dressing. According to *Mushrooms Demystified*, "when young, the succulent flesh cooks to the consistency of tofu and retains its color (which is reminiscent of 'candy corn'), making it especially attractive (and delicious) in omelets."

Sulfur shelf can often be collected in abundance. Only the tender edges of this shelf fungi, however, should be broken off and used; the rest of sulfur shelf is too woody and can cause stomach upset. (See Caution, following.)

To preserve for winter use, blanch and freeze. When in the Bush, I dry tender sulfur shelf for winter soups; the powdered product can be used to flavor sauces.

Photographer Norma Dudiak aptly describes bear's head fungus as a "frozen waterfall." Helen Broomell, a Wisconsin grandmother who canoed the Yukon River solo, introduced me to this white waterfall-of-a-fungus growing on an ancient cottonwood in Katmai National Park. "You can't mistake this for anything else," insisted Broomell, as she prepared a vegetarian bear's head soup for our supper. Besides being unmistakable, this fungus is delectable sautéed, stir-fried, pickled, or marinated; try it simmered with ramen noodles, vegetables, and water as a campfire soup.

To prepare bear's head, *Mushrooms in Color* suggests that ". . . the fruiting body be soaked before preparing it for the table to bring out insects which may be hiding among the spines." *Hericium* species, they continue, ". . . make a good addition to casseroles where bulk is needed."

Though I've only encountered moderate quantities of bear's head, Alaska botanist Boyd Shaffer reports harvesting fifty-two pounds of *Hericium* from one cottonwood tree! Shaffer recommends looking for old trees devoid of bark.

Hedgehog fungi are a local favorite. Neighbor Marsha Million, who is as fine a cook as she is a bootmaker, recommends the following techniques for preparing hedgehogs: scrape and discard the teeth. Parboil the flesh for a few minutes, and then drain in a colander. Sauté the parboiled fungi in garlic butter, or add to stir-fries and chowders. Million often cans hedgehogs for a welcome addition to winter meals.

All the fungi mentioned do well in the accompanying recipe for Wild Mushroom and Grayling Soup.

The scaly hedgehog, *Hydnum imbricatum*, is rated inedible by some field guides and foragers as it tends to have a bitter taste. Various members of the Alaskan Mycological Society, however, favor this fungus as a pepper substitute. They dry the fungus, grind it in a food processor, and use one tablespoon in soup as a flavoring agent.

Medicinal Use

Both puffballs and bear's head have traditionally been bound to wounds to stop bleeding. Inhaling puffball spores was a folk remedy for curing nosebleed. Doing so is hazardous, however; the spore powder can severely irritate bronchial passages. In modern medicine, the drug Calvatin is being extracted from *Calvatia* puffballs for use in cancer research.

Historical Use

Mature woody specimens of sulfur shelf have substituted for cork. "Under the name of *Polyporus*," writes Richard Mabey in *Plantcraft*, they've been "sold to entomologists as a mounting base for small insects."

Wild Mushroom and Grayling Soup

Contributed by Heather Tonga of Cantwell, Alaska

1 grayling
1 cup mushrooms
2 tablespoons butter
3 cups hot water
1 onion (or one bunch green onions), chopped
Seasonings — garlic, soy sauce, pepper, bay leaf, and lemon slices or chopped sorrel leaves

Cream sauce:
3 tablespoons flour
2 tablespoons butter
1 cup milk

Catch a grayling and pick some mushrooms you know are edible. Fillet grayling and cut into chunks. Clean and chop mushrooms. Sauté fish and mushrooms in 2 tablespoons butter. Add hot water, chopped onion (or green onions), and seasonings (adding amounts to suit your taste buds). Simmer soup for 20 minutes.

Meanwhile, make a cream sauce by sauteing flour in 2 tablespoons butter until brown. Add milk and stir until thick. Add soup to this cream sauce gradually, stirring constantly; simmer until thick and creamy. Serves 3 to 4.

Sulfur shelf was a source of yellow clothing dye in France in the 1800s. Through the ages, dry slices of sulfur shelf and other bracket fungi have served as a canvas for pen-and-ink and watercolor drawings. If using fungi in the home, spray them well with varnish; fungal spores continue to be released unless well sealed. Spores can cause irritation of the mucous membranes and possible allergic reactions.

Other

Biologically, a fungus is a nongreen organism that produces spores. Fungi include mildews and molds as well as the fleshy bodies with walled cells that we commonly refer to as mushrooms.

A mushroom is merely the fruiting body of underground fungal threads. Its purpose is to release spores. Just one three-inch cap can release nearly 2 billion spores! When conditions are favorable, a spore germinates and forms a bump that develops into a thread until a network of vegetative threads (mycelia) exist.

Variations in population exist year to year, not because "someone picked them all," but rather because of changing environmental conditions. Mycologist Dr. James Kimbrough of the University of Florida says, "if the season is too dry during the six-week period necessary for a particular species to develop, it may not appear visibly in abundance, but it is still there in the mycelial phase." When conditions are favorable (such as sufficient rainfall), the mycelia expand and the fruiting body appears, delighting foragers in search of mushroom meals.

Though fungi commonly feed humans and various animals, their lack of chlorophyll prevents them from directly feeding themselves. Since they can't use sunlight to synthesize nutrients, they must obtain nourishment in one of three ways. (1) Saprophytic fungi live on dead organic matter, such as leaf mold, dung, and decaying wood. (2) Parasitic fungi channel energy from living plants, animals, or other fungi. Sulfur shelf and bear's head are both parasitic; enzymes from their mycelia digest wood cellulose and rot the host tree. (3) Many mushrooms exist in a beneficial relationship (termed mycorrhizal symbiosis) with green plants. *Mushrooms of North America* observes: "through the fungus the host tree or shrub is able to obtain nitrogen, phosphorous, and other nutrients which are otherwise relatively unavailable. The fungus, on the other hand, obtains moisture and protection even under adverse environmental conditions." When trees are deprived of mycorrhizal partners (through soil sterilization and other methods), they exhibit reduced growth and greater susceptibility to disease. Many trees (and humans) find their lives greatly enriched through a relationship with fungi.

Caution

Slice each puffball in half before eating, making certain it is solid white throughout (and not a young button mushroom).

In California, people report toxic reactions (including nausea, vomiting, and diarrhea) from ingestion of sulfur shelf, *Laetiporus sulphureus*. Pat George, in *Mycena News*, says that at this time it is not known whether the toxic reactions are due to the fungus itself, the tree it grows on (in California, eucalyptus and oak serve as hosts), or a combination of factors. To date, I have not heard of any foragers eating young sulfur shelf growing on spruce who have experienced difficulties.

After positively establishing the identity and edibility of a fungus or any new plant food, it is good practice to sample no more than one tablespoon. Wait thirty-six hours before consuming more to assure freedom from allergic reactions.

Remember to seal fungi with varnish if using as decorations in a home.

Physical Description

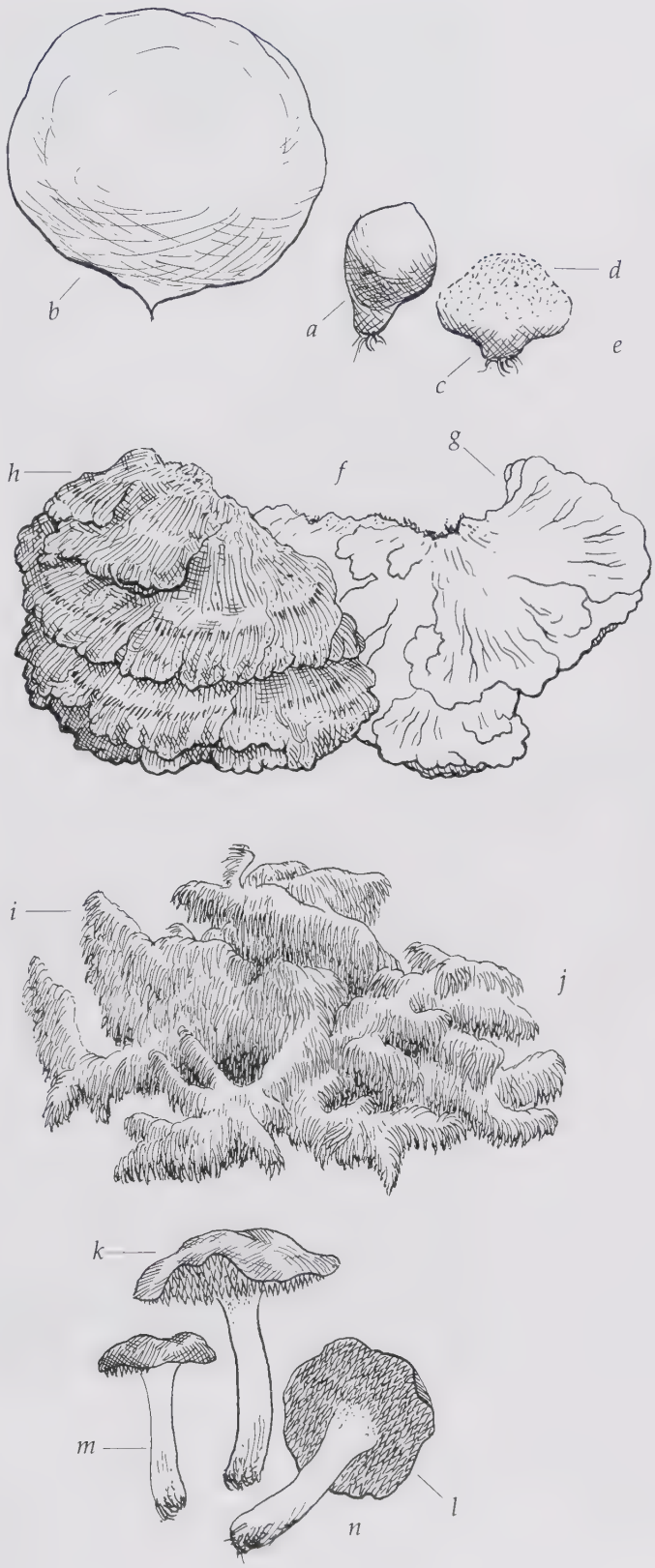
PUFFBALLS: *Lycoperdon* and *Calvatia* species; *a.* Puffballs vary in size from marbles to basketballs. Members of the genus *Lycoperdon* tend to be small but abundant; they have a single opening through which spores are released; *b.* Puffballs in the *Calvatia* genus form a number of spore-releasing cracks in their surface at maturity. *C. gigantea* frequents lawns and fields; it can grow to 10 inches or more in diameter; *c.* Fruiting bodies

are round to pear-shaped. Though puffballs lack a true stem, some have a stalklike base that varies in size from minute to substantial; *d*. The fruiting bodies may be smooth, or with wartlike growths. At maturity, the body turns powdery and "puffs" when stepped on, releasing clouds of spores. *e*. NOTE: Before eating puffballs, each specimen should be sliced in half and examined. If gills and stem are present, it is not a puffball but an immature gilled mushroom and should be discarded. Purple inner flesh, a tough rindlike skin, and bitter flavor are characteristic of inedible earth-balls (*Scleroderma* species). Yellow or green flesh indicates puffballs are too old to eat; white and creamy inner flesh characterizes puffballs prime for consumption. Puffballs in the genera *Calvatia* and *Lycoperdon* are filled with brown spores; whereas those of *Scleroderma* have purple ones.

SULFUR SHELF: *Laetiporus sulphureus*, also known as *Polyporus sulphureus; f*. Sulfur shelf is always found on trees and stumps. It has pores rather than gills or teeth. Only the tender outer edges of young sulfur shelf should be eaten. (See Caution, previous page); *g*. Edible portion; *h*. Sulfur shelf forms shelflike brackets; these are velvety and bright orange when young, with sulfur-yellow undersides. An equally edible subspecies, *subalbinus*, has a white underside. Spores are buff to yellow for *Laetiporus sulphureus;* subspecies *subalbinus* has a white spore deposit.

BEAR'S HEAD: *Hericium* species; *i*. Fruiting body is white with long downward-pointing teeth. Shape is irregular. *Hericium* species are always found on wood; *j*. The *Hericium* genus is noted for its edibility and distinctive looks. All species yield white spore prints. *H. ramosum* is a common northwestern species that forms compact clusters of long white teeth. *H. erinaceus, H. laciniatum*, and *H. coralloides* are other commonly eaten species.

HEDGEHOG: *Dentinum repandum*, also known as *Hydnum repandum; k*. Caps of hedgehog fungi tend to irregular in shape and smooth textured; their color varies from white or light tan to a rich brownish-orange; *l*. The presence of teeth instead of gills makes hedgehogs highly distinctive; teeth are cream-colored; *m*. The stalk of *D. repandum* ranges from 1/2 to 2 inches thick. A pencil-thin stalk is characteristic of *D. umbilicatum*, an equally edible species; *n*. NOTE: *Hydnum imbricatum* is a toothed fungus with a scaly cap. Many foragers rate this species as inedible due to its bitter taste. Flavor of the smooth-capped *Dentinum* species is mild. *D. repandum* and *D. umbilicatum* have white spores; those of the scaly-capped *H. imbricatum* are brown.



P. grandiflora is the showiest *Pyrola* species. Leaves are evergreen, hence the common name — woodland wintergreen. (Jon R. Nickles)

Single delight, *Moneses uniflora*, has one dainty white flower per plant. (Jon R. Nickles)

PYROLA (*Pyrola* species)
SINGLE DELIGHT (*Moneses uniflora*)

OTHER NAMES: wintergreen, Arctic wintergreen, woodland wintergreen, shinleaf, kidneyleaf (*Pyrola* species); large-flowered wintergreen (*P. grandiflora*); sidebells, one-sided pyrola, yeavering bells (*P. secunda*); shy maiden, frog's reading lamp, Bethlehem star, wood nymph, one-flowered wintergreen, St. Olaf's candlestick (*Moneses uniflora*)

Wintergreen Family (Pyrolaceae)

Habitat and Range

Pyrola and single delight are common ground cover in coniferous woods; *P. grandiflora* also favors dry tundra and mountains.

Numerous *Pyrolas* are distributed throughout our region. Some noteworthy species include *P. secunda*, *P. minor*, and *P. asarifolia* (Alaska and the Yukon to California); *P. grandiflora* (Alaska and the Yukon to British Columbia); and *P. picta* (British Columbia to California).

The distinctive *Moneses uniflora*, commonly called single delight or shy maiden, ranges from central Alaska and the northern Yukon to California.

Pyrola and Single Delight: Woodland Wintergreens

The evergreen carpet underlying northwestern coniferous woods often includes a generous supply of pyrolas and single delight. As the family's common name (wintergreen) indicates, the plants are green all winter. People often assume these herbs will taste like wintergreen candies, but wintergreen oil is actually a byproduct of *Gaultheria procumbens*, the false wintergreen or checkerberry of the eastern United States. As usual, common names can lead to common confusion!

The plant's botanical names, however, are very descriptive. *Pyrola* stems from *pyrus* for pear, and the leaves of many species do resemble pear leaves. *P. grandiflora* is the species with the largest flowers. *P. secunda* has a *secund* (one-sided) inflorescence and *P. picta* (painted pyrola) looks as though the veins were whitewashed. *Moneses* stems from *mono*

(single) *hesis* (delight), an apt name for this single-flowered beauty; the specific *uniflora* also means one-flowered.

Harvest Calendar

Spring: leaves. (Since they are evergreen, they are sometimes collected even in winter, but are considered best before flowering.)

Late summer: seeds.

Food Use

JoAnn Nelson of Dillingham, Alaska, reports that pyrola seeds are sometimes eaten with fish eggs. Donald Kirk, in *Wild Edible Plants of Western North America*, says that single delight seeds, "... along with their capsule, are edible raw, roasted, parched, ground, etc." However, I find it extremely difficult to justify harvesting quantities of the seeds of these dainty wildflowers for their minimal contribution to food supplies; to me they form a much more valuable contribution as a feast for the spirit.

Medicinal Use

Medicine is my only personal practical application for the wintergreens. The leaves make good additions to skin salves. In China, pyrola leaves are applied as a poultice for snakebite (a complaint we happily don't have in Alaska). A mashed leaf poultice, though, is also recommended to relieve itching of insect bites, which we do have aplenty!

Herbalists use pyrola interchangeably with pipsissewa (*Chimaphila umbellata*), a plant that occurs sporadically from the Alaska Panhandle to California. Moore says in *Medicinal Plants of the Mountain West* that this herbal substitution "... used to bother me in a self-righteous sort of way, particularly after having to walk halfway around a mountainside to find a neat little stand of pipsissewa and probably stepping on a thousand pyrolas in the process. In fact, however, the pharmacology of the two plants is the same."

Both pyrola and pipsissewa contain ursolic acid, and the glycosides arbutin and ericolin. Both are used in the treatment of kidney problems and skin eruptions. Traditionally, a decoction made by boiling one teaspoon of the chopped leaves in 1 cup water for

Physical Description

PYROLA: *Pyrola* species; *a*. Flowering stem grows to 12 inches high; foliage tends to hug the ground; *b. P. grandiflora* has the largest flowers; in hue they vary from white to greenish-white with dark veins; *c. Pyrola* flowers all have 5 petals, 5 sepals, and 10 stamens. Petal color varies with species from white to yellow-green to pink; *d*. Flowers of *P. secunda* are all on 1 side of the stalk.

SINGLE DELIGHT: *Moneses uniflora; e*. Single delight has 1 flower per stem with 5 white petals. Flower nods while blooming, then becomes an erect capsule.

Breath-So-Fresh

1 teaspoon chopped pyrola leaves
1 teaspoon chopped mint leaves
1 cup boiling water

Steep leaves in water for 5 to 10 minutes. Strain. Let stand until cool and then gargle with the fluids.

fifteen to twenty minutes is sipped several times a day for several weeks. Moore says this will intensify a skin condition but greatly shorten its duration.

Pyrola decoctions are also used as a vaginal douche and a mouthwash for canker sores and gum inflammations. Steeped as a tea, pyrola has been used for soothing ulcers. Pure pyrola juice is also said to aid coagulation; it's used both for internal and external bleeding.

Single delight is a favorite healing herb of Alaskan natives. In *Alexandrovsk Magazine,* English Bay resident Juanita Melsheimer (who refers to the plant as Bethlehem star) reports steeping two or three leaves in one quart water for fifteen minutes. Melsheimer warns that if a weak tea appearance results, extra water should be added. The solution should be clear; this is sipped as needed to soothe sore throat. If the tea is too strong, it can skin the throat and provoke bleeding. Babies are given a few teaspoons of the brew; for this purpose only one leaf is used.

Smith in "Arctic Pharmacognosia," says that Southeastern Tlingits use single delight for coughs and colds. Jill Thorington of Sitka, Alaska, says that quantities of the herb are collected by locals for such purposes.

Cosmetic Use

For a breath-freshening mouthwash on camping trips, I like using the Breath-So-Fresh preparation.

Other

Pyrola and single delight are exceptionally difficult to transplant successfully and should be left in their native habitat. Their creeping rhizomes and small fibrous roots dislike garden soil; some botanists believe that, like many fungi, they exist in a symbiotic relationship with conifers.

The wintergreen family includes four genera, *Pyrola, Moneses, Chimaphila,* and the saprophytic "Indian pipes" *Monotropa,* all of which are represented in the Pacific Northwest. The family ranges from North America to the high mountains of Europe and Asia; they exist mainly in the North Temperate Zone.

Another common name for *Moneses uniflora* is shy maiden. Like a shy maiden, the blossom demurely nods its head — forcing you to bend your knee and contort your neck to peak at its distinctive floral face, or smell its enchanting, lily-of-the-valleylike fragrance. After fertilization, however, the petals drop away, the stalk straightens, and the seed capsule is boldly held erect. It's an interesting phenomenon to observe.

VIOLET (*Viola* species)

OTHER NAMES: wild violet (*Viola* species); yellow violet (*V. sempiverens, V. glabella,* and *V. biflora*); marsh violet (*V. epipsela*); Alaska violet (*V. Langsdorffii*).

Violet Family (Violaceae)

Habitat and Range

Viola habitat is variable with species, from stream banks to meadows and woods. Conditions may be wet or dry.

Numerous *Viola* species are distributed from northern Alaska and the Yukon to California. A local flora is necessary for identifying the violets in each area.

Violet: Nutritious Snack

For those interested in trivia, violet questions would make an excellent category. Which famous leader was nicknamed Corporal Violet? Which mythological figure had her tears transformed into violet blossoms? What virtue is *Viola* the symbol for? Read on and see!

Harvest Calendar

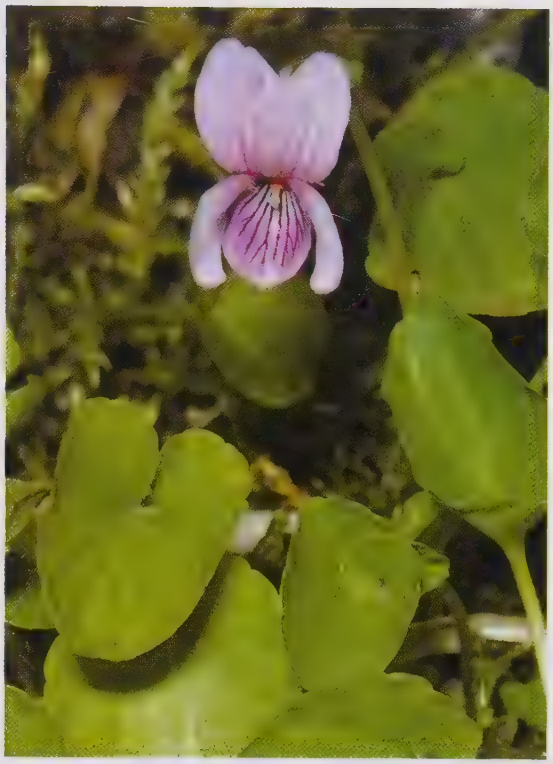
Spring to summer: violet leaves and flowers.

Food Use

Young violet leaves, buds, and flowers can be eaten raw as a trail snack or added to salads. Did you know that nibbling just two violet leaves fulfills your daily requirement for vitamin C? This is a tasty way to meet your ascorbic acid quota.

Young leaves can also be steamed lightly as a potherb. Added to soups, leaves serve as a thickening agent. *Herbs for the Medieval Household* tells of the fifteenth-century practice of using violets in herb omelettes and fritters; they are equally delicious in those dishes today. Violet Mint Sauce is an ideal accompaniment for omelettes, as well as roast pork or venison.

Violet flowers can be candied as cake decorations. Susan Shaffer of Soldotna, Alaska, adds the blossoms to gelatin salads. Flowers also add color and flavor to vinegar and make a festive



Flowers of marsh violet, *V. epipsila,* have dark stripes on the lower petals. Rootstocks have long runners. (Jon R. Nickles)

Some violet species have yellow blossoms. Violet flowers are often candied as cake decorations.

Physical Description

VIOLET: *Viola* species; *a*. Can grow to 10 inches, but are often shorter; *b*. Violet flowers have 5 unequal petals. The lower one is long and forms a "spur." The other 4 are arranged in 2 unlike pairs. Both *V. Langsdorffii* (illustrated) and *V. adunca* have bearded lateral petals. Flowers of these species are violet to bluish-violet; beards are white in *V. adunca*; *c*. Flowers of *V. sempervirens*, *V. glabella*, and *V. biflora* are yellow. *V. sempervirens* can be identified by its basal runners. *V. glabella* has a stout rootstock and leaves that come to a distinct point. *V. biflora* has a thin rootstock and rounded leaves; *d*. Flowers of marsh violet, *V. epipsila*, (illustrated) are lilac with dark veins on the lower petals. *Viola renifolia* has white beardless flowers with purple stripes. *V. Selkirkii* is a rare species; leaves are downy on top with deep indentations between the teeth. Flowers are violet; *e*. Violets seed prolifically.

gift. Wine is another *Viola* product; violet wine was a favored brew in ancient Rome.

Flowers of violets are a colorful and edible garnish for casseroles and salads. In addition, they (and other flowers) are a good source of hormones and are especially recommended for women. Violet flower (and leaf) tea is a popular British beverage.

Medicinal Use

Athabascans place dried marsh violet roots on top of hot wood stoves. As the roots smoulder, a fragrant "Indian perfume" is released; the Dena'ina believe this wards off illness.

Violet salve, made by simmering the entire herb in lard, is a famous remedy for skin inflammations and abrasions. Poultices of the macerated herb are said to be cooling, and soothing to swellings and feverish bruises.

Violet flower tea and syrup are gentle laxatives. Blended with coltsfoot, violet syrup is soothing for coughs and sore throat. The blossoms, infused in water, are a traditional eyewash. Fresh violet leaves, used internally and externally, are a folk remedy for cancer.

Cosmetic Use

Violets are emollient (softening to the skin) and an excellent ingredient in lotions and night creams. The flowers, steeped in goat's milk, are an old Celtic beauty treatment. Violet water (see Rose section for directions on making floral waters) is gentle enough for bathing babies, and is wonderful for the adult complexion as well.

Add violet flowers and leaves to popourris and herbal baths. Violet footbaths are relaxing; these were once treatment for insomnia. Those with trouble sleeping might also try lying on a pillow filled with violets, valerian, and pineapple weed.

Real violet perfume is exquisite, but unfortunately rarely available. Most on today's market is synthetically produced.

Historical Use

Like roses, violets have played a large role in art, poetry, and folklore. It is one of the few flowers that has served as a political symbol. The Corporal Violet leader was none other than

Napoleon. The dainty flower served as emblem for his followers. In fact, due to the strong association between violets and Bonaparte, French law prohibited public display of art featuring these flowers for more than half a century!

In Greek mythology, when the nymph Io was turned into a cow, Zeus had violets spring up from her tears to console her and sweeten her diet. Today Io's Latin name *Viola* honors this genus of plants.

The virtue synonymous with violets is modesty.

Violet Mint Sauce

1/2 cup violet leaves and flowers
3 tablespoons butter
1 tablespoon fresh or 1 teaspoon dry mint
3 tablespoons fresh orange juice

Sauté violet leaves and flowers in melted butter. Add mint and orange juice and stir well. Serve immediately. Serves 2 to 3.

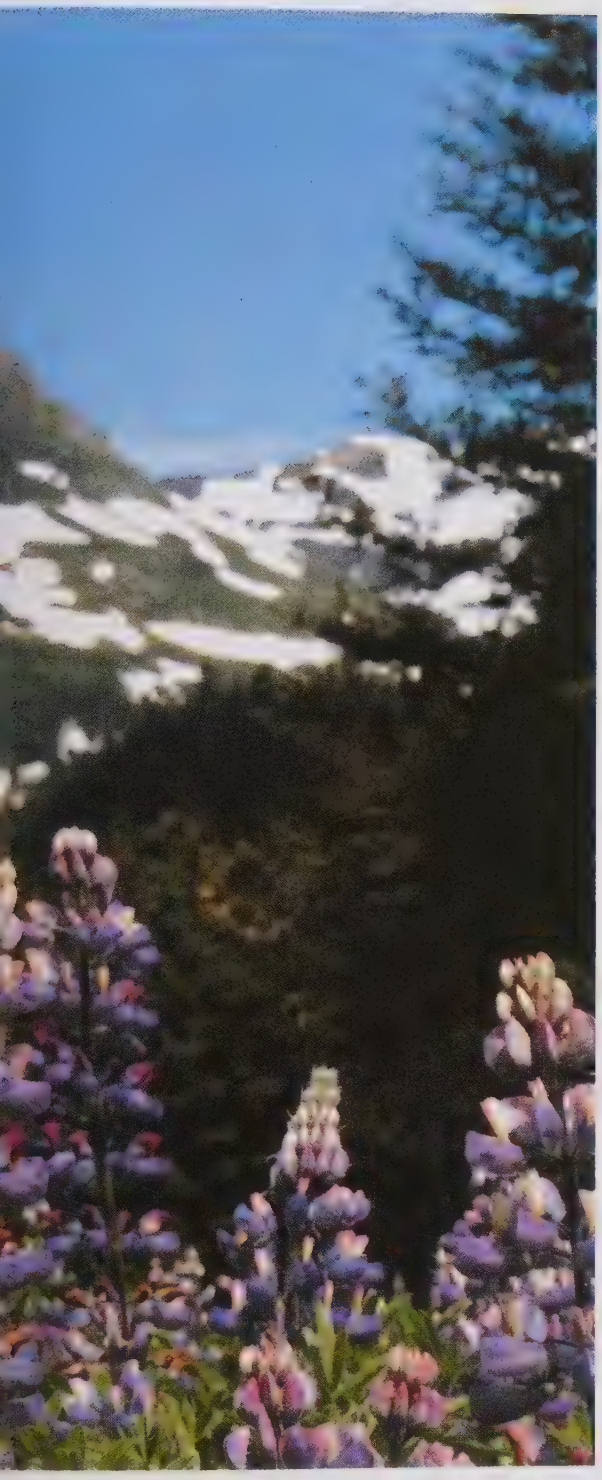
Other

Violets are extremely interesting botanically. The first showy violet blossoms, those we traditionally associate with the plant, may or may not accept their own pollen. Violets have an inconspicuous secondary set of self-pollinating (cleistogamous) flowers that never open. These are a backup device, says Alaskan botanist Ed Berg, "that guarantees seed set, even when cross-pollination fails, say in a dry year when there are few bees." When seeds are mature, the cases open explosively, catapulting seeds away from the mother plant.

Violets make a pretty addition to the kitchen herb garden or wildflower patch. Plant in rich moist soil and in partial shade. As always, pick to propagate. Thin plants to encourage more abundant growth; don't take all that you see. In some areas of California, certain violet species have been endangered by indiscriminate collection. Harvest only in approved areas.

Caution

Whereas many writers indicated all violets are safe for consumption, others insist some yellow-flowered species may be somewhat purgative. All violets do have a tendency to be somewhat laxative, so proceed slowly until you become familiar with your particular reactions. Personally, I've never experienced any difficulties whatsoever from eating violets, but then again, I've never sat down to a heaping plateful of just this plant.



Lupines brighten countless Pacific Northwest meadows and roadsides.

Wild Grassy Meadows and Sunny Forest Openings

How does the meadow flower its bloom unfold?
Because the lovely little flower is free
Down to its root, and, in that freedom, bold.

——WILLIAM WORDSWORTH

A wild grassy meadow would rank high if a popularity poll were offered for "favorite habitat." Such meadows are magnets for human wildflower fanciers, as well as early spring bears grubbing for roots and summer voles stockpiling their winter cache. In coastal Alaska, I treasure the rare days warm enough for sunbathing in the lupine patch.

One friend observed that white flowers seem to have the most enchanting fragrance, and ever since I've been discovering the truth of that. It appears that the less showy white blossoms have developed exquisite "floral perfume" to attract pollinators. It's intriguing to watch the vital partnership between flowers and insects (bees and flies, as well as mosquitos).

Meadow flowers such as wild roses, violets, and monkshood are also common in forest openings. Open woodland habitats may be created by the death of ancient trees, fallen by decay, windstorm, or flood. Note the wildflowers that appear in a sunny opening, and how they differ from the vegetation in the darker regions of the forest.

A. genuflexa is distinctive in that its leaves "genuflect" or bend sharply downward.

ANGELICA (*Angelica* species)

OTHER NAMES: wild celery (*Angelica* species); bent-leaf angelica (*A. genuflexa*); seacoast angelica, *ikuusuk* (*A. lucida* also known as *A. archangelica Gmelinii*)

Parsley Family (Umbelliferae)

Habitat and Range

Angelica habitat varies from moist meadows and ditches to coastal beaches.

A. genuflexa, bent-leaf angelica, ranges from the Alaska Peninsula along the coast to the Alaska Peninsula and south to California.

A. lucida, a variation of the noteworthy *A. archangelica*, ranges from the northwest coast of Alaska and the Aleutian Islands to California.

A number of other Angelica species of unknown edibility are distributed throughout our region. NOTE: Foragers should read the Caution before harvesting any *Angelica* species.

Angelica: Heavenly Herb, Hellish to Identify

Chinese treatises written four hundred years before Christ praise the therapeutic qualities of angelica root. Chinese angelica is still marketed today, over twenty centuries later, under the name *dong quai* (or woman's ginseng); the processed root (derived from several *Angelica* species) is esteemed for regulating menstruation and expelling afterbirth.

Though northwestern *Angelica* species are less known in medical circles, interest in their constituents is increasing. Foragers should be well aware that angelica superficially resembles the deadly poison hemlock, *Cicuta Douglasii*. Don't harvest unless you are one hundred percent sure of identification!

Complicating matters of harvesting angelica is the claim of Soldotna, Alaska, botany instructor Boyd Shaffer that *Cicuta* and *Angelica* have been found hybridizing. Shaffer says labratory analysis at Kenai Peninsula Community College laboratory on angelica roots have substantiated these findings. Hybridized plants exhibit the chambered roots of *Cicuta*. Other botanists insist hybridizing is not possible since the plants' chromo-

somes are not the same, and consider misidentification as the culprit for confusion. (See Caution for additional details.)

Harvest Calendar

Spring: young stems.
Early summer: young leaves.
Spring and fall: roots.
(See Caution, following.)

Food Use

In *Nauriat Nigiñaqtuat*, Anore Jones writes that Inupiat (who refer to *A. lucida* as *ikuusuk*) ". . . eat the peeled stems raw in seal oil." Jones adds that fish are good cooked with young *ikuusuk* leaves.

Candied stems of the cultivated *A. archangelica* are a gourmet delicacy sold worldwide. Seeds and dry leaves are marketed as a flavoring.

Though wild angelica is still eaten extensively in many areas of Alaska, one source reported that the herb is harvested around Wales but avoided near Nome. In a St. Marys interview, I was told angelica is avoided because "the difference can no longer be told between wild celery and poison hemlock." The problem is not yet clearly attributable to hybridization, peculiar soil conditions causing toxicity, or identification difficulties. Until further documentation is available concerning safety of northwestern species, I do not recommend the plant for internal use (unless cultivated in home gardens).

Medicinal Use

Smith, in "Arctic Pharmacognosia," says that *A. lucida* leaves were used by Aleuts as a tonic brew, and that Eskimos used the root ". . . in the treatment of most illnesses and feelings of malaise." Eating a small piece of root daily was considered preventive medicine. *Flora of Alaska and Neighboring Territories* mentions that fumes of the burning root were inhaled by Siberian Eskimos as a seasickness remedy.

Dena'ina Athabascans regard *A. lucida* (which they call *ulchena ggits'a*, meaning "Aleut celery") as very strong medicine. Priscilla Kari describes how the boiled mashed root is placed on cuts and aching areas. One Upper Inlet man told Kari how a doctor wanted to cut off his finger because of blood poisoning. Instead, the man washed the infected area with wormwood tea and applied angelica root poultices. After three days, his finger was healed.

Seeds and roots of the cultivated *A. archangelica* are steeped as teas, boiled as decoctions, tinctured with alcohol, and ground and dried for capsules. Herbalists recommend

Physical Description

ANGELICA: *Angelica* species; *a.* Seacoast angelica, *A. lucida*, grows 1 1/2 to 4 feet high; bent-leaf angelica, *A. genuflexa*, grows 3 to 6 feet high; *b.* Flowers have 20 to 40 rays per umbel. They are white to greenish for seacoast angelica, white to pinkish for bent-leaf angelica; *c.* Ribs of fruit are all similar, with narrow wings (*A. lucida*). Fruit is rounded with side ribs having broad wings and back ribs having narrow wings (*A. genuflexa*); *d.* Stem erect, hollow, with many oil tubes. Stems of bent-leaf angelica are often reddish-purple; *e.* The leaf stalk (petiole) has an inflated base. *f.* Note the bent-leaf stems of *A. genuflexa*. They appear to genuflect, hence the specific name *genuflexa*. Rootstock of *A. genuflexa* is divided into compartments (*septate*).

Angelic Oil

Water
1 cup dried angelica root
1 cup dried wormwood leaves
1/2 cup dried nettle leaves
1/2 cup dried devil's club root
16 ounces almond or apricot kernel oil
Essential oil (optional, available at natural food stores)

Place boiling water in bottom of double boiler. In top of double boiler, place herbs and oil. Heat for 30 minutes, or until a color change takes place in the oil (indicating extraction of the herbal ingredients has occurred). Strain through cotton or muslin cloth; squeeze well to extract as much oil as possible. Add essential oil to scent product if desired. This is a pleasant blend for soothing tired bodies.

these preparations for treating menstrual cramps, nausea, heartburn, gas, and indigestion. Horses troubled with windy colic are given ground angelica root in their feed. In *The Encyclopedia of Herbs and Herbalism,* Stuart reports that *A. archangelica* "... contains volatile oil and derivatives of coumarin which stimulate digestive secretions, control peristalsis and increase appetite. Also bitter principles, sugar, valeri, and angelic acids." The constituents of other species need further documentation.

Cosmetic Use

Angelica root is used in facial steams for oily skin, in herbal baths for skin and nerve problems, in mouthwashes for freshening the breath, and as a perfume for cosmetic products. The recipe for Angelic Oil is a personal favorite.

Historical Use

According to folklore, angelica's name honors an angel that appeared in a dream who instructed man to use this herb. During the Middle Ages, the root was a popular plague preventative. According to the medieval language of flowers, a gift of angelica indicated "inspiration."

Carrying angelica was supposed to protect one from devilish influences, and sprinkling the root powder in one's home frightened away witches. More recently, Siberian Eskimos wore the root as an amulet for protection from polar bears.

Drinking an angelica root decoction was reputed to create disgust for alcohol. The root, however, was an ingredient in vespetro, a French brew favored by King Louis XV. Today the root still flavors British bitters, commercial gin and chartreuse, and liqueurs such as Benedictine.

Laplanders chewed dry angelica root like snuff to promote long life. Angelica leafs and roots were common flavorings in herbal tobaccos.

Other

Angelica was traditionally grown in medieval monasteries. It does well in the home garden in moist shady soil with a pH of about 6. Seeds should be sown in fall; freshness is necessary because viability declines quickly. Growing from seed in an area devoid of *Cicuta* would assure safe-to-harvest angelica.

Caution

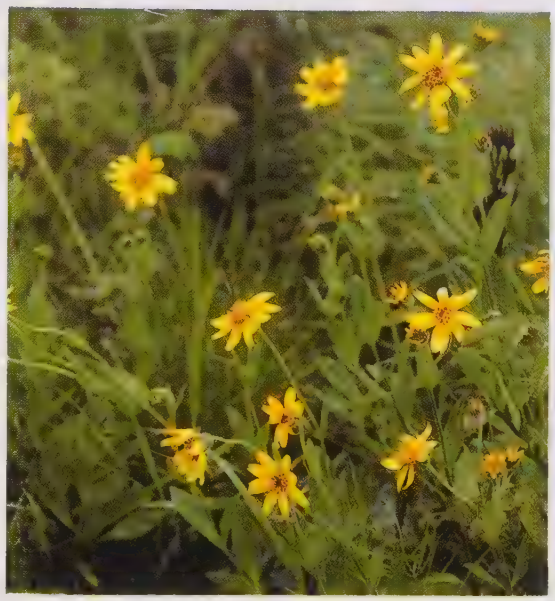
Angelica bears strong resemblance to the deadly *Cicuta Douglasii.* Shaffer advises slicing and examining harvested angelica roots for a chambering effect; however, since a septate root (divided into compartments) characterizes angelica, the chambering (broader compartments) of *Cicuta* is merely a matter of degree. An additional identification tool for these species is to examine the leaf veins and where they terminate. It is typical of angelica veins to end at the tip of each leaf tooth; *Cicuta* veins end in the "cut," the division between the teeth. Bozeman, Montana, herbalist Robyn Klein teaches a ditty as a memory tool: "Veins to the cut, pain in the gut (*Cicuta*); veins to the tip, pretty hip (angelica)."

If the slightest doubt exists regarding angelica's identification, pass it by. *Cicuta* is the most toxic botanical in North America, and death awaits the unwise.

ARNICA (*Arnica* species)

OTHER NAMES: leopard's bane, mountain tobacco, wolf's bane

Composite Family (Compositae)



Arnica is often found in dense patches.

Habitat and Range

Meadows, stony slopes, moist areas, and woods are arnica habitats.

Alpine arnica, *A. alpina* (also known as *A. montana*), ranges from northern Alaska and the Yukon to British Columbia.

Heart-leaf arnica, *A. cordifolia*, ranges from the central Yukon and the Alaska Panhandle to California.

Variable-leaf arnica, *A. diversifolia*, ranges from British Columbia to California, and grows sporadically in Alaska.

There are more than one dozen *Arnica* species distributed throughout all areas of our region except the extreme north Arctic.

Arnica: External Aid for Sprains

Herbalist Michael Moore describes *Arnica* as a "DYC," or "damn yellow composite." For beginners studying flora, the yellow members of this family tend to cause confusion. There are lots of yellow flowers with lemon-colored rays in the wild.

If you're merely interested in identifying the *Arnica* genus, look for yellow composites with OPPOSITE leaves (*Arnica* is often confused with *Senecio*, which generally bears alternate leaves). Further identification consists of using a razor to slice the tiny head flowers lengthwise, and examining them with a 10x

Physical Description

ARNICA: *Arnica* species; *a.* Species range from 6 inches to about 2 1/2 feet high; *b.* All species have yellow ray flowers. Number of heads varies with species from 1 to 5; *c.* Flower of *A. Lessingii* nods in late flowering; anthers are purplish-black; *d. A. Lessingii* subspecies *Lessingii* has 2 to 3 pairs of stem leaves. Subspecies *Norbergii* has 5 to 6 pairs stem leaves; *e. A. Chamissonis* has leaves that are mostly without stems (sessile); *f. A. latifolia* has 2 to 4 pairs stem leaves; *g.* Basal leaves of *A. latifolia* have long stems (petioles); *h. A. alpina* (sometimes called *A. montana*) is similar but with narrower, sometimes hairy leaves.

magnifier for the presence of hairlike bristles. The composites are a complex plant family, and a local flora is a must for species identification.

Harvest Calendar

Spring or fall: roots.
Summer: flowers or whole herb.

Medicinal Use

Though *A. montana* (called *A. alpina* by Hultén) is the preferred species for medicinal use, any arnica can be used in a wilderness emergency. Arnica is a choice herb for EXTERNAL treatment for sprains, strains, and muscular aches and pains. It should be used on UNBROKEN skin only. (See Caution, following.)

Homeopathic preparations of arnica (see Homeopathy section at back of book) are a first-aid treatment for trauma. Ed Berg of Homer, Alaska, says that he always carries homeopathic arnica tablets in his toolbox and first-aid kit, and uses them to reduce bruises, prevent shock, and fight infection. A 3X homeopathic Arnica remedy is used for seasickness, and a 6X preparation for epilepsy. (See Homeopathy section at back of book for details on potency.) Arnica cream and ointment are commonly sold in homeopathic pharmacies and natural foods stores. Professional guidance is highly recommended for any internal arnica use. Severe blistering and toxic reactions can result from internal use of teas and tinctures!

Cosmetic Use

Decoctions of flowers and roots are added to footbaths to relieve aches and swelling. The bacteriocidal properties of the powdered herb make it a good ingredient in foot powders.

As an after-shampoo conditioner, arnica is said to promote hair growth and scalp health. I like to blend arnica with nettles and horsetail in shampoos and rinses.

Historical Use

Since the sixteenth century, arnica has been prescribed for treating bruises and nervous disorders. It was official in the *United States Pharmacopoeia* for more than a century. In *Earth Medicine, Earth Foods,* Weiner mentions that Catawba Indians used arnica root tea for soothing back pains.

Other

The name *Arnica* translates as "lamb's skin" and refers to the herb's modified leaves (bracts) that are often woolly. Arnica grows well from seeds or root cuttings in a mixture of loam and sand. Though some species can be invasive, I welcome it in the herb and rock gardens. Any thinnings have a very practical use.

Caution

Arnica contains arnicin, choline, a volatile oil (dimethyl ether of thymohydroquinone), arnidendiol, angelic and formic acid, and certain unidentified substances that alter cardiovascular activity. *Herbal Medications* warns that active principles ". . . are irritants that produce a violent toxic gastroenteritis, pulse abnormalities, nervous change, intense muscular weakness, cardiovascular collapse, and death." The FDA lists arnica as "unsafe" and bans the herb for human consumption.

Taking arnica teas and tinctures internally can invoke symptoms of poisoning, like burning stomach pains, nausea, vomiting, and diarrhea. Only homeopathic preparations are advised internally; consult a homeopath for recommended dosage.

When using arnica externally, you may wish to dilute the tincture with water. Pure tincture may cause adverse reactions with sensitive skin. Do not use if cuts or open wounds are present.

Foot Powder

1 cup white or blue clay
1/2 cup dry arnica (whole flowering herb)
1/2 cup dry devil's club (root bark)
1/2 cup dry plantain (whole herb)

Grind herbs in coffee mill or herb grinder until a fine powder is produced. Blend well with clay.

BEDSTRAW (*Galium* species)

OTHER NAMES: goose grass, gravel grass, stick-a-back, cheese rennet, maid's hair, Our Lady's bedstraw (*Galium* species); cleavers (*G. aparine*); northern bedstraw (*G. boreale*); sweet-scented bedstraw (*G. triflorum*)

Madder Family (Rubiaceae)

Habitat and Range

Bedstraw habitat varies from moist meadows and woods to seashores and stony alpine slopes.

Major Pacific Northwest *Galium* species include *G. aparine* (Aleutian Islands and south-central Alaska to California), *G. boreale* (northern Alaska and the Yukon to California), and *G. triflorum* (Alaska Peninsula, Interior Alaska, and Yukon Territory to California).

Bedstraw: Mattress Stuffer and Medicine

Bedstraw's botanical name, *Galium*, is from the Greek *gala* for milk; this refers to the herb's traditional use in coagulating milk for making cheese. To obtain this rennet, the herb is blended with an equal amount of salt, covered with water, and then simmered until half the original amount of fluid remains.

In the olden days, mattresses were generally stuffed with herbs; sweet-scented *Galium* was highly popular, hence their common name bedstraw. Folklore refers to them as "Our Lady's Bedstraw," insisting that Jesus lay in his manger on these herbs.

The nickname "cleavers," which is given to *G. aparine* and other clinging species, describes how the weak-stemmed plants depend on others for support; they piggyback on others with their hooked bristles and also "cleave" a ride on people and passing animals to spread seeds.

Harvest Calendar

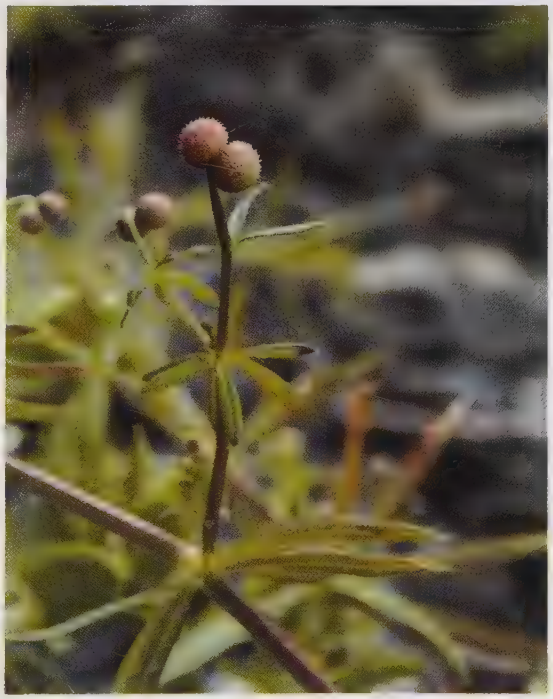
Spring: stems before flowering (food use).

Summer: flowering herb (medicinal use).

Late summer to early fall: seeds (for coffee substitutes).

Fall (or spring): roots (for making dyes).

Cleavers, *G. aparine*, has weak stems that stick to one another. Flowers are sparse.



Bedstraw fruits may be paired or singular, bristly or covered with stiff hairs.

Physical Description

BEDSTRAW: *Galium* species; *a. Galium boreale* can grow to 3 feet, often less in wild; *b.* Flowers may be sparse (2 or 3) or many in a cluster; *c.* Flowers are small, with 4 greenish-white to pure white petals. Some species, such as *G. boreale* and *G. triflorum*, are very fragrant; *d.* Whorls consists of 4 to 8 leaves, depending on species; *e.* Leaves of most species have 1 vein. *G. boreale* and *G. kamtschaticum* have 3 veins; *f.* Stems may be erect, or lying down and rising up at the tip (decumbent). *G. aparine* has weak stems that depend on other plants for support; *g. G. triflorum* has 6 leaves in a whorl and leaves that come to a distinct point (mucronate leaves). *G. aparine* also has mucronate leaves, stems with prickles that point downward, and 6 to 8 leaves in a whorl.

Food Use

Young bedstraw greens can be served as a potherb; the harsh texture of the stems disappears with light steaming. Cooked and cooled, they are often added to salads. They are a traditional ingredient in reducing diets; in the 1600s, Gerard recommended that women cook cleavers in mutton broth, with or without oatmeal added "... to cause lanknesse and keep them from fatnesse."

For a pleasant brew reminiscent of Oriental tea, pour boiling water over the flowering herb and steep five to ten minutes. *Galium* also yields one of the best wilderness coffee substitutes. The herb is, in fact, a member of the Madder family to which the coffee tree belongs; unlike its tropical cousin, however, it is caffeine-free.

Medicinal Use

Oregon herbalist, Ed Smith, says cleavers is an underrated herb. Smith advocates *G. aparine* for lymphatic cancer, tumors, cysts, cystitis, and for gravel in the urinary tract.

Since shelf life is poor, the fresh herb is greatly preferred. For year-round use, tincture the fresh plant or freeze quantities of the tea. Generally, one cup of the tea (steep one heaping tablespoon fresh flowering herb in 1 cup water) is taken before each meal; for serious conditions, a thermos of the tea is prepared and a sip taken every twenty minutes. For goiter and mouth cancer, the tea is drunk plus used as a gargle. The herb is said to dissolve stones in the bladder, rid organs of toxic waste, and strengthen the liver. Hepatitis, jaundice, goiter, and painful urination have all reportedly been helped by this herb.

Numerous testimonials as to the effectiveness of *G. aparine, G. verum,* and *G. mollugo* in treating goiter and cancer are reported in *Health Through God's Pharmacy.* For example, a 63-year-old woman with a cancerlike tumor in her larynx and excruciating pains in her arms was scheduled for an operation in which the doctor was "... intending to cut the nerve between the neck and collar bone to at least free her from the worst of the pain. He said there was no other help." Author Treben suggested the woman drink bedstraw tea and gargle with it, rub the

sore areas with bedstraw ointment, plus sip a blend of yarrow, stinging nettle, and calendula every twenty minutes. After four days of treatment the pain subsided. The amazed physician recommended the woman continue the herbs, and the condition cleared without an operation.

Galium tea, says the California School of Herbal Studies, helps regulate fluid balance and body weight. For reducing diets, blend bedstraw with chickweed (*Stellaria media*) and the seaweed, *Fucus*. A touch of mint adds flavor and acts as a stimulant in the formula.

Externally, *Galium* infusions are used as wash for psoriasis and ulcerous skin afflictions. Its refrigerant properties make it soothe burns of all sorts. The fresh mashed herb is effective on skin sores of both humans and animals. Juliette de Bairacli Levy, in *The Complete Herbal Handbook for Farm and Stable*, reports that *G. aparine* "... is a proved poultice for reducing tumors."

Dena'ina Athabascans refer to *G. boreale* as *ts'elveni vets'elq'a* (wormwood's partner); Lime villagers use it as a hot pack for aches and pains. I like to blend various bedstraw species in massage oils and liniments for sore muscles.

Cosmetic Use

For acne and skin irritations, wash with bedstraw tea; use it in herbal steams and soothing skin lotions. Blossoms of fragrant species (like *G. boreale* and *G. triflorum*) make exquisite perfume.

Historical Use

In *Ethnobotany of Western Washington*, Gunther mentions that Makah Indian tribes rubbed their scalp with mashed bedstraw to stimulate hair growth; the Lummi rubbed their bodies with the fragrant herb as a perfume. A Quileute woman who wished to be mated collected hair from her chosen, and wove it with *Galium* and her own hair.

For shepherds in ancient Greece, tangles of cleavers served as a sieve; today, in Sweden, the herb is still used to filter straw and other foreign matter from milk. When camping, try straining your tea with a handful of the matlike species.

Bedtime Brew

1 cup scrubbed dandelion roots
1/4 cup bedstraw seeds

Roast roots and seeds in 200°F oven until brown and well-dried. Grind in coffee mill or herb grinder to a powder consistency. Brew like coffee, using 1 teaspoon herb per cup water. Flavor with milk and honey if desired. Store remainder in airtight container.

Rose madder paint, obtained from *Galium* roots, has been used by artists throughout the ages. The reddish-purple hues are stunning, but unfortunately impermanent. Painter (and botanist) Boyd Shaffer says roots yield "more a dye than a true pigment. Colors last ten to fifteen years and then turn black."

Edible Garden Weeds of Canada states that bedstraw's "... green fruits were used by lacemakers to make padded heads for their pins."

Other

Galium species commonly have white to greenish-white flowers, leaves in whorls, square stems, similar chemical properties, and widespread distribution.

Though *G. aparine* is an annual, most of our native species are perennials. They are cultivated easily in sunny soil; choose your garden species with care. Some, such as *aparine*, piggyback over all the plants in your garden.

Caution

Many herbalists recommend bedstraw as an herb that can be used freely without fear of irritation. However, in *Alaska's Wilderness Medicines*, Viereck cautions that "continued use of cleavers tea has caused irritation to the mouth and tongue." Demulcent herbs (such as *Fucus*, or the non-Alaskan slippery elm) should be blended with *Galium* if the herb is taken frequently. Viereck adds that *Galium* should be avoided by those with a tendency to diabetes.

Burnet leaves are folded and fanlike when they first appear. Young leaves can be added to soups and casseroles.

Physical Description

BURNET: *Sanguisorba* species; *a.* Flower spikes grow 1 to 1 1/2 feet; *b.* Flowers are in spikes at top of stem. *S. Menziesii* and *S. officinalis* have short red flower spikes; *c. S. stipulata, S. occidentalis,* and *S. minor* have greenish-white flower spikes. Flowers lack true petals. Sepals are colored and petal-like (4 in number); *d.* Leaves are pinnately compound with 7 to 15 leaflets.

BURNET (*Sanguisorba* species)

OTHER NAMES: salad burnet, garden burnet, Italian pimpernel (*Sanguisorba* species); Sitka burnet, Sitka great burnet (*S. Stipulata* also known as *S. sitchensis*); great burnet, burnet bloodwort (*S. officinalis* also known as *S. microcenphala*)

Rose Family (Rosaceae)

Habitat and Range

Burnet habitat varies from meadows and moist places to swamps.

S. stipulata ranges from central Alaska and the Yukon south to Oregon.

S. officinalis occurs sporadically from western and central Alaska and the central Yukon to California.

Other local species with similar use include *S. Menziesii* (Alaska and British Columbia), *S. occidentalis* (British Columbia to California), and *S. minor* (California).

Burnet: Herb for Bleeding and Diarrhea

Burnet is a common Northwest herb that's too rarely appreciated. The ancients, however, revered the styptic properties of the plant's leaves and roots. The generic name, *Sanguisorba,* derives from the Latin roots *sanguis* (blood) and *sorbeo* (to staunch), referring to the herb's ability to stop bleeding.

Harvest Calendar

Spring: leaves (for food).

Summer: leaves and flowers (fresh or dried for medicinal teas and cosmetics).

Fall or early spring: root (for medicine).

Food Use

Though the cultivated *S. minor* is most favored for food use, the wild species are edible (though not choice). Spring burnet leaves can be chopped and blended with cottage cheese, mixed with other herbs to flavor vinegars, or dried and ground as a seasoning. I prefer adding fresh leaves to soups and casseroles, and sometimes use burnet leaves as a filler ingredient in egg rolls.

Medicinal Use

Dry burnet flowers and leaves for tea; blend with other tonic herbs (such as dandelion root and nettle leaves) for a special spring pick-me-up. Continual use of burnet tea, wrote John Gerard in his *Herbal* ". . . preserves the body in health and the spirit in vigour."

Though *S. officinalis* is preferred for medicinal use, other species can be substituted in wilderness emergencies. *The Herb Book* advocates burnet juice for diarrhea, hemorrhage, and varicose veins.

Burnet root is very astringent. Root decoctions are traditional treatment for internal and external bleeding, dysentery, and genital discharges. The brew is also used as a mouthwash for gum problems. The powdered root can be sprinkled on cuts after shaving.

Historical Use

Italians have a proverb, says Mrs. Grieve in *A Modern Herbal*, that where there is no burnet ". . . the salad is neither good nor good looking." Germans often grew burnet as fodder for livestock as it thrives even on poor soil. Europeans often used burnet as an ingredient in herbal beer and wines; sipping burnet wine, insists Gerard, will ". . . quicken the spirits, refresh and cheer the heart and drive away melancholy."

Other

Burnet leaves have an interesting surface, which totally repels water. When submerged, a thin layer of air adheres to all surfaces, giving the leaves a fascinating appearance of having been silver-coated.

S. stipulata is one of Alaska's most fragrant flowers. Burnet makes a wonderful addition to the wild garden; propagate by seed or root division. To extend the season of leaf edibility, clip the blossoms as they appear; the dried flowers can be added to potpourris for an interesting texture.

Spring Rolls

2 tablespoons olive oil
2 cups chopped chickweed
2 cups chopped nettles
1/2 cup chopped burnet
1/2 cup chopped fireweed shoots
1/2 cup chopped dandelion leaves
1/4 cup chopped mustard leaves
1/4 cup chopped, cleaned fiddleheads
1/4 cup peeled, chopped cow parsnip stems
1/4 cup chopped clover leaves
2 tablespoons chopped chives
12 egg roll wrappers
1 tablespoon flour mixed with 2 tablespoons water
Fat for deep-frying

Sauté greens in hot olive oil for 3 minutes. (Greens reduce in volume during cooking.) Drain and cool vegetables. Spoon about 1/4 cup on each egg roll wrapper. Fold wrappers; dab edges with flour dissolved in water to seal. Deep-fry in hot fat until egg rolls are golden brown. Drain on paper towels. Serves 4 to 6 (as appetizers).

Some *Sanguisorba* species have reddish flower spikes. (R. W. Tyler)

Flowers of chocolate lily look attractive but smell like a barnyard.

CHOCOLATE LILY (*Fritillaria camschatcensis*)

OTHER NAMES: Indian rice, black lily, sarana, Kamchatka fritillary (*F. camschatcensis*); mission bells (*F. lanceolata*); yellow bells (*F. pudica*)

Lily Family (Liliaceae)

Habitat and Range

Chocolate lilies (*F. camschatcensis*) are the only *Fritillaria* species in Alaska. They are common meadow flowers, found coastally from the Aleutian Islands and Alaska Peninsula southeastward to the Panhandle, British Columbia, and Washington.

Mission bells (*F. lanceolata*) range from southern British Columbia to northwestern California. They can be distinguished by rounder flowers mottled with yellow-green.

Yellow bells (*F. pudica*) range from southern British Columbia to northern California. They have distinctive yellow blossoms. For a complete list of species, consult the flora in your area. All species have similar use.

Chocolate Lily: The Indian Rice

Chocolate lily is lovely to look at but has a fragrance that reminds me of horses and barnyards, pleasant scents to my countrified self. However, many folks just wrinkle their noses at the musty fragrance.

Foragers, however, should take a closer look at this wild lily. Its bulb has been a staple for native peoples since prehistoric times, and could provide sustenance on a modern camping trip.

Physical Description

CHOCOLATE LILY: *Fritillaria camschatcensis* (illustrated); *a*. Grows to 2 feet in good soil, but often shorter in the wild; *b*. Flowers are chocolate brown to purple black in color with yellow anthers and a green stigma. They have an odor similar to manure; *c*. Leaves are arranged in whorls with parallel veins; *d*. Seeds are in capsules; *e*. First year spring shoot is a single leaf; *f*. Edible bulb is white, made up of ricelike bulblets.

Harvest Calendar

Late summer: green seedpods.

Late summer to early fall: bulbs. Bulbs are best after the foliage has yellowed, indicating the plant is storing starches and sugars for the coming winter. When harvesting, be certain to knock a few of the ricelike bulblets back into the hole to replant. The bulbs can also be eaten in early spring but are difficult to locate at this time.

Food Use

The crisp, ricelike bulbs of chocolate lily can be eaten raw. They're a favorite of John Polk of British Columbia. When hiking in remote valleys in Alaska, Polk "grazed" the summer bulbs for sustenance and raved about their flavor.

I find the bulbs less bitter and much better flavored when gathered later in the season after the foliage has yellowed. The steamed bulbs, topped with garlic butter or a spicy sauce, please the palate. Bulbs are highly versatile — try them boiled, mashed, or stir-fried and topped with butter, brown sugar, herbs, or sauces. Add them to casseroles. Experiment! For starters, you might want to sample them in a cream soup; this makes a good appetizer, or a meal in itself when rounded out with bread and salad.

If bulbs are a bit bitter, try soaking overnight in water or cooking in a change of water. Adding lemon juice also reduces bitterness. Palatability varies not only with time of harvest (most bitter when in flower), but also with local soil conditions.

For winter use, bulbs can be dried; add to soups and chowders, or grind to extend flour supplies. The bulbs are a good source of starch, a commodity often difficult to obtain in the wilderness.

The green seedpods can also be eaten raw and added to stews, but I find them quite bitter and less palatable than the autumn bulbs.

Historical Use

Fritillaria bulbs have been an important food in Indian life in the Northwest. Traditionally, bulbs were harvested in autumn by women while the men were out hunting geese. Bulb designs, says Haskins in *Wild Flowers of the Pacific Coast*, were woven into baskets and engraved into cedar boxes.

Other

There are about one hundred *Fritillaria* species, ranging from North Africa to Europe, Asia, and western North America. The plants are generally hardy and easily cultivated in home gardens.

Chocolate lily bulbs are a favorite of voles, tunneling rodents that cache them underground. I've noted highs in the vole cycle coinciding with highs in the chocolate lily population, and suspect that it's due to bulblets being dropped in the receptive soil of vole-plowed meadows. Human gatherers, on the other hand, have decimated populations of lilies, such as yellow bells, by taking indiscriminately from the earth. Harvesting, blended with wise stewardship, can yield benefit and bounty for all.

Creme á la Lily Soup

1 cup chocolate lily bulbs
1/2 cup chopped sorrel leaves
2 tablespoons butter
2 tablespoons flour
2 cups milk
1/2 cup grated Parmesan cheese
Salt and pepper to taste

Wash chocolate lily bulbs well. Steam bulbs and sorrel leaves until tender (5 to 10 minutes). Drain and set aside. In saucepan, melt butter; stir in flour until a paste forms. Slowly add milk, stirring well. Heat to boiling, stirring constantly to prevent sticking. Boil until soup thickens (about 1 minute). Remove from heat. Stir in chocolate lily bulbs, cheese, and seasonings. Let soup sit covered for 5 minutes to blend flavors. Serves 2.

Columbine flowers are a stately addition to the ornamental garden.

COLUMBINE (*Aquilegia* species)

OTHER NAMES: red columbine, Western columbine, crimson columbine (*A. formosa*); blue columbine, dove's foot, (*A. brevistyla*); yellow columbine (*A. flavescens*)

Crowfoot Family (Ranunculaceae)

Habitat and Range

Columbines flourish in meadows, moist woods, and mountain slopes.

Major columbine species in the Pacific Northwest include blue columbine, *A. brevistyla*, (Interior Alaska and central Yukon to northern British Columbia), red columbine, *A. formosa*, (south-central Alaska and southeast Yukon south to California), and yellow columbine, *A. flavescens*, (southeast British Columbia to eastern Washington and northeastern Oregon).

Additional Northwest species include *A. pubescens, A. Shockley, A. eximia, A. jonesii,* and *A. coerulea.*

Columbine: Love Charm and Lice Repellent

The dainty columbine is a showy flower, often adopted as a backyard ornamental. As the specific name of our red columbine (*formosa*) indicates, the blossom is indeed "beautiful." Whether crimson or purple, wild or cultivated, the flower is well-loved and readily recognized.

Harvest Calendar

Summer: flowers.

Autumn: roots and seeds (for external use only, see Caution, following.)

Physical Description

COLUMBINE: *Aquilegia* species; *a.* Grows to 3 feet; *b.* Seeds are enclosed in capsules. (NOTE: Children are reported to have died from eating the seeds.); *c.* The knobby portion of the flower, filled with nectar, is sweet, safe, and delicious; *d.* Leaves are divided in 3 parts; *e.* Flowers vary in color with species from vivid red to pale yellows and blues; *f.* Many yellow stamens are present; styles protrude from the center of the flower; *g.* buds.

Food Use

Columbine flowers are one of my favorite trail snacks. The nectar-laden tips are sweet and delightful on a hike. I also like to add the flowers to summer salads.

Medicinal Use

In 1097, St. Hildegarde of Rupertsberg, Germany, popularized the use of columbine for swollen glands. *The Complete Book of Health Plants* says columbine ". . . has diaphoretic and resolvent action, relieves palpitations, and prevents loss of consciousness; the fresh juice is helpful in clearing up ulcers and boils." (See Caution, following.)

Herbs & Things recommends using fresh columbine roots ". . . mashed in olive oil to rub into aching rheumatic joints for relief of pain." Mashing the seeds and rubbing them into the scalp is a traditional treatment for head lice.

Historical Use

Columbine seeds were highly valued by Missouri River Indians and were an article of trade between tribes. *Earth Medicine, Earth Foods* reports that Omahas considered them an aphrodisiac; braves would rub the seeds between their hands and attempt to shake hands with the lady they fancied in order to win her affection. Girls who didn't share the romantic attraction feared the power of this herb. They also believed smelling it could cause a nosebleed.

British Columbia herbalist, Don Ollsin, says that local native groups used columbine root for casting spells. Ollsin's native teacher gave him and his wife a blessed root. "It was an incredible experience," says Ollsin, "and another level of herbal use."

Other

The common name columbine comes from the Latin *Columbinus* and refers to the flower's resemblance to a cluster of doves. The genus name, *Aquilegia*, is commonly believed to stem from the Latin for eagle. However, according to botanist Lewis Clark, in *Wild Flowers of the Pacific Northwest*, the name more accurately stems from the Latin roots *aqua* (water) and *legere* (collect) and refers to the watery nectar that collects at the tips of the spurs. This nectar is relished by hummingbirds and long-tongued moths; other sweet-seeking but not so well-equipped insects sometimes vandalize the blossoms, biting holes through the floral membranes to extract the sugary fluids.

Columbines are often added to rock gardens and flower beds of perennials. Propagate by division or seeds, and plant in light, sandy soil. In a 1597 herbal, John Gerard says columbines ". . . are set and sowne in gardens for the beautie and variable colour of the floures." It's an equally popular practice today!

Caution

The Encyclopedia of Herbs and Herbalism warns that columbine seeds can be fatal to children, and that most parts of the plant contain a cyanogenic glycoside. Do not use roots or seeds internally.

Though I have eaten the blossoms on numerous occasions, I would not recommend eating large quantities of columbine flowers. In moderation, they appear to have no ill effects.

Floral Salad

Columbine flowers
Rose petals
Violet leaves and flowers
Geranium flowers
Fireweed flowers
Lettuce and/or spinach
Salad dressing

Blend flowers with lettuce or spinach and your favorite dressing. The dish decorates the table and delights your senses!

Appearance of cow parsnip's umbrella-shaped flowers is an indication the plants are past their prime.

Cow parsnip flower buds add a pungent flavor to casseroles.

COW PARSNIP (*Heracleum lanatum* also known as *H. maximum*) and *H. Sphondylium* subspecies *montanum* .

OTHER NAMES: wild celery, *pushki, pootschki,* cow cabbage, masterwort, Indian celery, hogweed

Parsley Family (Umbelliferae)

Habitat and Range

Cow parsnips thrive in meadows and open woods from the coast to the mountains.

Heracleum lanatum, commonly called cow parsnip or *pushki,* ranges from central Alaska and the Yukon south to California.

Cow Parsnip: Multipurpose Vegetable and Medicine

Despite the fact that field guides consistently warn foragers about confusing cow parsnips with poison hemlock, the plants are very difficult to mistake for one another. The flowers of both plants are white and arranged in umbels, but there the similarity ends. Cow parsnips, whose generic name honors Hercules, is of Herculean proportions, growing to nine feet in height. Its leaves are large and maplelike; as the species name *lanatum* indicates, stems are woolly-hairy. (For comparison, turn to the deadly *Cicutas.*)

Harvest Calendar

Spring to early summer: young leaves, shoots, flower buds.

Spring or fall: roots.

Late summer to early fall: seeds.

Food Use

Cow parsnip stems can be eaten raw or cooked; stems should always be peeled before taking internally. (Some individuals are highly allergic to the plant. See Caution, following.) Stems, stuffed with cream cheese or seafood fillings, make an attractive hors d'oeuvre. For a main meal, fill stems with cheese or meat and bake with tomato sauce. Cow parsnip makes an excellent substitute for celery in cream soups, casseroles, and stir-fries.

Peeled stems can be chopped and dried

and added to homemade soup and seasoning mixes. Daisy Lee Bitter of Homer, Alaska, suggests fermenting fresh peeled cow parsnip stems as sauerkraut; use alone or mixed with cabbage.

Mairiis Davidson-Hollister of Homer, Alaska, says cow parsnip was a popular vegetable on the family homestead. After their outer covering was peeled, buds were steamed as a potherb. Seeds were added to stock for flavoring.

It's reported that very young cow parsnip leaves can be boiled in changes of water and served as a vegetable or soup ingredient. Burned, the leaves are said to yield a salt substitute.

I've talked with a forager who claims she ate "delicious" *H. lanatum* roots while in the Southwest, and I've read numerous field guides that proclaim the edibility of these parsniplike roots. However, I've yet to meet anyone who's found roots of Alaska specimens even remotely palatable. Despite numerous field tests in which roots were boiled and baked for them, visiting guests have always grimaced at the smell, and positively winced at the taste. Though I mashed and dressed cow parsnips with butter, even my vegetarian Doberman rejected them. I'm not certain whether it's soil or climatic conditions that affects the flavor so dramatically, but Alaska roots have a strong medicinal taste and I recommend them for that use only.

Medicinal Use

Medicinal Plants of the Mountain West recommends drinking cow parsnip tea (made by steeping 1 teaspoon dry root in 1 cup water) for nausea, acid indigestion, or heartburn. "In New Mexico," the book adds, "a strong tea is made from the dry or wilted roots and poured into the bath water of a recently paralyzed person. This is repeated once a day until some nerve function has returned or the therapy has brought no apparent relief."

Outer Inlet Dena'ina Athabascans place hot roots on toothaches to deaden the nerves. Roots are burned as incense to ward off illness. Upper Inlet people place small pieces of cow parsnip root in meat to worm dogs.

The Aleuts drink cow parsnip teas for colds

Physical Description

COW PARSNIP: *Heracleum lanatum; a.* Small white flowers arranged in umbrellalike clusters (umbels). There are 15 to 30 rays per umbel. Several umbels per plant, but terminal umbel is the largest. They grow on stems to 9 feet high; *b.* Lobed leaves are large, to 12 inches wide at maturity. They are dark green above, light-colored below. When young they are covered with dense fuzz, and grow smoother with age. Plant has rank odor; *c.* Ribbed fruits are brown, papery, and flat; *d.* Plant has large, inflated sheaths; *e.* Stem is stout, hollow, woolly. Roots are brownish-white and have a rank odor and taste. CAUTION: Handling cow parsnip can cause severe dermatitis; *f.* Size comparison of parsley family plants; *g.* Lovage (*Ligusticum scoticum*); *h.* Seacoast angelica (*Angelica lucida*); *i.* Bent-leaf angelica (*Angelica genuflexa*); *j.* Cow parsnip (*Heracleum lanatum*); *k.* Poison hemlock (*Cicuta Douglasii*); *l.* Water hemlock (*Cicuta mackenzieana*)

Stir-Fry Supreme

1 onion, chopped
1 cup peeled, chopped cow parsnip stems
1/2 pound beef or moose (cut into thin strips)
4 tablespoons oil
3 tablespoons chopped chives
2 tablespoons soy sauce
1 teaspoon curry
2 cups cooked noodles or rice

Sauté onion, cow parsnip, and meat in hot oil. When onions are brown, stir in chives, soy sauce, and curry. Serve with noodles or rice. Serves 2. (NOTE: If you find the flavor of cow parsnip too strong, you can parboil the plant before adding it to the recipe.)

and sore throat and they also place heated cow parsnip leaves on minor wounds and sore muscles, according to Smith in "Arctic Pharmacognosia."

I use cow parsnip seeds and roots in liniments for aches and pains, as well as in tinctures for settling upset stomach and relieving gas pains. I'm currently experimenting with seeds in blends for seasickness.

Historical Use

Cow parsnips feature in various legends. In one tale, recounted by Charles Gillham in *Medicine Men of Hooper Bay*, the orphan Niklik embarks on a long kayak journey and encounters a beautiful maiden bathing in a creek. Thinking she would make a good wife, he quietly approaches the woman to embrace her (as is Eskimo custom) only to discover that "instead of a young woman, he held in his arms a tall, slender stalk of the wild celery plant that the Eskimos eat."

Other

As the names cow parsnip and cow cabbage suggest, cattle enthusiastically graze the robust summer leaves. Alaskan moose seem to browse the dead winter foliage, while bears, deer, and elk favor the spring shoots. Animals have been known to roll in the roots when wounded.

Botanically, there are about sixty *Heracleum* species worldwide. They can be added to wild gardens for a bold accent. Propagate by seed or root division and plant in a sunny location in moist soil. *H. lanatum* ranges from Newfoundland to Georgia and west to California, and also in Europe and Siberia.

Close inspection of the immense flowering head of the *Heracleums* reveals that the tiny white flowers are not all the same. The outer blossoms of each umbel have greatly extended petals on the outer edges, raising interesting questions as to how each tiny flower "knows" it is on an outer edge and should have extended petals on that side.

Some of Alaska's deadliest plants are members of the parsley family. Be positive of identity of the species you are gathering. (Foragers wishing to study another edible Umbelliferae may wish to investigate *Conioselinum chinense*.)

Caution

Gardeners who try to weed out this prolific plant by hand, or hikers who break too many of the stems, often get afflicted with severe dermatitis. The chemical furanocoumarin (present in the sap and outer hairs) is the culprit, causing sensitivity to light. A severe "sunburn" (complete with redness, blistering, and running sores) results. This same ailment occurs if the unpeeled stems are touched to the face or lips.

Handle the plant carefully, preferably with gloves. Peel and discard the irritating outer hairy-woolly covering. If you touch the plant directly, wash hands thoroughly with soap and water as soon as possible. Even with proper preparation, some individuals remain highly allergic to the plant and find the "burn" extremely slow to heal. I've met various Alaskans who suddenly developed reactions after handling cow parsnip safely for years. Dogs that roll in the plants may loose patches of hair and develop red sores.

Since the root and seeds contain rather potent sterols and saponins, do not take during pregnancy without medical approval.

ELDER (*Sambucus* species)

OTHER NAMES: tree of music, stinking elder (*Sambucus* species); red elder, false elder, Pacific red elder, European red elder (*S. racemosa* also known as *S. callicarpa*), blue elder, tree elder (*S. cerulea* also known as *S. caerulea*)

Honeysuckle Family (Caprifoliaceae)

Habitat and Range

Elders flourish in open woods and subalpine meadows.

S. racemosa, commonly called red or false elder, ranges from southwest Alaska to the Alaska Peninsula and south to California.

Blue to black-fruited elder species, ranging from British Columbia to California, include *S. glauca, S. melanocarpa,* and *S. cerulea.*

Elder: Floral Fritter and Wrinkle Remover

When housesitting an Alaskan coastal cabin, I took great delight in the two-mile trek through the summer "jungle" of elders, alders, fireweed, and cow parsnips. The showy *Sambucus* blossoms and brilliant crimson fruits hugging the trail were my special favorite, and I was delighted to discover that the shrub's utilization extends far beyond mere aesthetics. This "tree of music" offers innumerable sweet sounds for foragers and ornamental gardeners alike.

Harvest Calendar

Spring: buds and leaves.

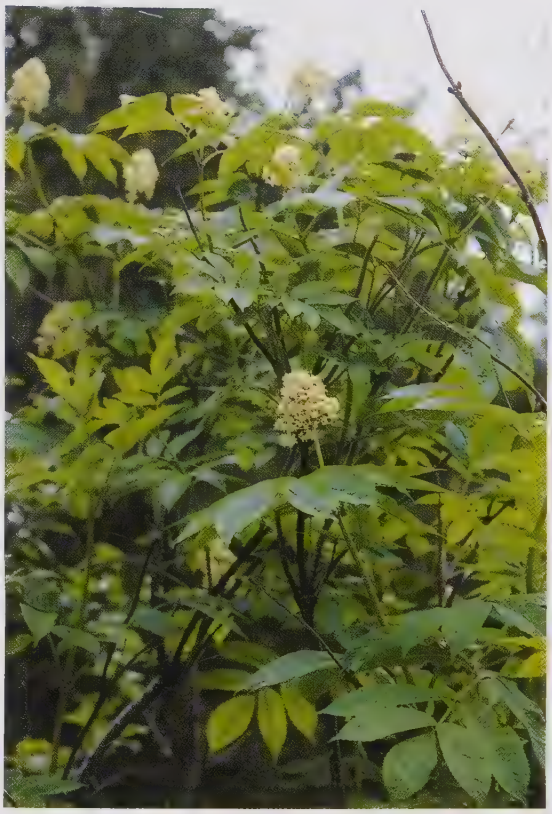
Late spring to early summer: flower clusters when fully open.

Mid to late summer: fruits. (See Caution, following.)

Food Use

Alaskan homesteader Ruth Kilcher often added elder blossoms to pancakes to lighten the batter and add flavor. Blossoms are also a good ingredient in waffles and cakes. Dried flowers can be ground and added to flour and baking mixes.

Elder fritters are my favorite culinary application for *Sambucus;* when testing recipes for this book, friends repeatedly begged for one



Elder flower clusters are famed in cosmetics as a skin rejuvenator.

Though red elder fruits have toxic seeds, the pulp is usable in jellies and herb vinegars.

Physical Description

ELDER: *Sambucus racemosa* (illustrated); *a*. Shrub to 15 feet high; *b*. Spring buds in opposite arrangement are quite distinctive; *c*. Dense clusters (cymes) of yellowish-white flowers; *d*. Compound leaves have 5 to 7 leaflets. Leaflets have serrated edges; *e*. Bright red berries contain toxic seeds; *f*. Foliage has a strong, unpleasant scent; *g*. Stems and branches are light brown and easily broken. Stems contain a soft, toxic pith.

more taste trial of the fritter recipe, "just to make certain it was okay!" The flavor reminds me of fried clams.

Fresh or dried elder blossoms make a pleasant tea. Add mint leaves, fireweed flowers, rose leaves and petals, and other herbs of your choice for a special beverage.

The flower buds can be pickled or steamed as a potherb. Alaskan friends report nibbling a few spring leaf buds as a trail snack when hungry for early "greens."

Elder fruits are often ignored because of their reputation for toxicity. But deseeded products, such as elder jelly (sold commercially by Alaska Wild Berry Products) are safe for consumption. Just remember to cook the fruits (raw, they can cause stomach upset) and process in a manner that removes the seeds. Straining the fruit through cheesecloth for jelly-making is one effective way; another is placing the cooked berries in a food mill. The seedless pulp can be used for jams and marmalades, or for flavoring wines or vinegars.

My favorite elderberry product is a concentrate made by Violet Lotscher of Homer, Alaska. Lotscher prepares a syrup that she seals in sterile jars and later dilutes with water in order to make a breakfast beverage. The Lotscher children like the beverage: it tastes like commercial fruit punch. The elder product is nutrition-packed with vitamins A, B, and C, and minerals calcium, iron, and potassium.

Food Plants of British Columbia Indians reports that coastal tribes cooked and dried the elder fruits, and fashioned them into cakes. At feasts, cakes were soaked in water to soften and then eaten with grease. (The seeds and skins were spit out.)

Medicinal Use

In 1664, John Evelyn ballyhooed elder as a ". . . catholicon against all infirmities whatever." It was touted as curative for more than seventy diseases, ranging from plague to toothache; the flower tincture was even reputed to restore sight to the blind!

Though elder's healing powers may be somewhat short of miraculous, elder flower eyewashes remain popular to this day. The floral tea is still drunk for colds, constipation,

and rheumatic complaints; it's also regarded as a gentle, relaxing brew that calms the nerves. Mixed with mint it's a traditional drink for breaking children's fevers, but herbalist Michael Moore warns that it may be contra-indicated for youngsters with a history of convulsions and high fevers.

Jeannine Parvati, in *Hygieia*, says that elder flower tea contains a natural estrogen and is often effective for relieving menstrual cramps. In addition, Parvati recommends an herbal oil containing elder blossoms, comfrey, vitamin E, bee pollen, and essential oil for preventing stretch marks during pregnancy.

Elder leaves have been used as poultices for sprains and skin irritations; root and leaf decoctions serve as washes for skin ailments. Dena'ina Athabascans sip root decoctions for ailments ranging from colds to tuberculosis; to prepare, they peel and discard the outer bark and boil the remainder in water. The root is squeezed well and the tea is drunk.

Leaves and flowers are common ingredients in skin salves for piles, burns, and boils. In England, this is frequently used as a livestock ointment.

Cosmetic Use

Ladies, ancient to modern, have indulged themselves with beautifying elder flower lotions. Elderblow water, obtained by distilling or infusing the blossoms, is famed for lightening freckles and clearing the complexion.

Use the blossoms in facial steams for dry or irritated skin. Blended with yarrow and mint, the blossoms make an invigorating footbath. Add elder blossoms to massage and bath oils for soothing and softening the skin. For dry hair, try an elder flower tea hair rinse.

Historical Use

In medieval times, elder was associated with devils and witches. Planting a shrub near the house, or using the wood for baby cradles, was totally taboo. Yet if you were unlucky enough to have one growing naturally near you, you couldn't cut it down. *The Herb Book* mentions that "one belief held that a person would die within three days after chopping down an elder."

Elder Fritters

1 cup flour
1 teaspoon baking powder
1/2 teaspoon salt
2 beaten eggs
1 cup milk
2 tablespoons melted butter
4 cups elder flowers
Oil for frying

In large bowl, blend flour, baking powder, and salt. In medium bowl, blend eggs, milk, and butter. Dip elder flowers in batter. Then coat with flour mixture. Fry in hot fat until golden brown. Drain on paper towels. Serve with honey or maple syrup. Serves 4 or more as appetizers. NOTE: This recipe is also excellent using fiddleheads instead of elder flowers. Serves 2 to 4.

Elders later came to be associated with good fortune, and with powers to repel nasty spirits as well as lightning. To keep witches away from your residence, pick leaves on April 30 and hang them above your doors and windows. In northern areas, however, you'll need to take cuttings into the home in vases of water to force the greenery for the spring deadline! The shrubs are described by herbalist Ed Smith as a "condominium for Devas" (plant spirits). I feel extreme contentment when in a lush elder grove, and highly recommend the shrubs for landscaping.

Before cutting elder, custom dictates that you beg permission of Scandinavia's lady of the elder, Hylde-moer. Carrying a twig on your person is reputed to provide protection and good luck. Cattlemen traditionally rode with elder switches to insure safety for their herds, and old-time hearse drivers favored elder-handled coach whips for their carriages.

Elder's tree of music nickname comes from its ancient use as material for wind instruments. The botanical *Sambucus* comes from *sambuke*, a Greek instrument made from elder's hollow stem. *Field Guide to Edible Wild Plants* says Indians pressed ". . . poisonous pith out of

straight stems with hot sticks to make flutes." Today elder stems are still frequently hollowed for making toy flutes and peashooters, as well as spiles for tapping birch trees. (See Caution, following.)

Insect repellent is another elder use. The leaves, which are notoriously odorous, repel insects as well as people. Dairies traditionally hung elder branches on walls during cheese-making activities to repel flies. In the woods you can place a sprig behind your ear or in your hair to ward off mosquitoes; a sprig of sweet gale is also advised, both to sweeten the air and to further repel insects. Elder leaves can also be infused in water and sprayed on plants to repel aphids.

Other

Plantcraft reports that elder pith, which is among the lightest of solids, is used by watchmakers to absorb grease and oil, and by biologists to grip minute specimens for microscopic work. Green elder wood is said to be excellent for small carvings. Dry wood is reported as hard as ebony and ideal for making pegs and cogs for machinery.

Still another elder product is natural dye. The leaves, with chrome as a mordant, yield a distinctive green hue; the berries, with alum and cream of tartar, provide crimson dye.

Sambucus, a hardy member of the honeysuckle family, ranges from Africa to Alaska. The shrub does well from cuttings and root division and can be shaped into a handsome hedge. In Alaska, the shrub tends to be undependable. A hard winter may kill all or part of the hedge, although it will recover rapidly. Some growers advise pruning the tree lightly every winter. If you obey the dictates of custom, you'll remember to "beg permission" before beginning.

Caution

Elder seeds, stems, roots, and unripe fruits all contain the purgative alkaloid sambucine, as well as hydrocyanic acid. Taken internally, diarrhea and vomiting can result. *Herbal Medications* warns that there are reports of poisonings ". . . from using the stems as blowguns, and from using too much of the plant for medication. There is a chance of cyanide poisoning if significant amounts were to be ingested." If using hollowed elder stems, make certain to thoroughly remove (and discard) the pith; boiling cleaned stems before use is highly recommended.

Pharmacist Ed Carli says that first aid for cyanide poisoning includes removing any remaining food product from the patient's mouth, inducing vomiting, and giving artificial respiration. (See Treatment of Acute Poisoning at back of book.) Medical aid should be sought promptly.

Berries should be consumed only after cooking and seed removal. I've never encountered any difficulty with elder flowers or seedless berry products. Some individuals, however, experience nausea even when elder is properly prepared. Proceed slowly until you are familiar with how your particular system reacts.

FALSE HELLEBORE (*Veratrum* species)

OTHER NAMES: white hellebore (*V. album*); green hellebore, itchweed, Indian poke, corn lily (*V. viride*); California false hellebore (*V. californicum*)

Lily Family (Liliaceae)

Habitat and Range

False hellebore is a common plant in moist, open woods, low meadows, and stream banks.

V. viride ranges from south-central Alaska and the central Yukon southward to California. *V. album* is rare in our area, occurring only in the Aleutian Islands and the Seward Peninsula of Alaska. *V. californicum* grows in Washington, Oregon, and California. Other species of interest include *V. fimbriatrum*, a California species with fringed flowers, and *V. insolitum*, a hairy species of California and southwest Oregon. All are toxic.

False Hellebore: Powerful and Poisonous

Poison! The word makes us shy away and wonder why deadly plants were ever included in the scheme of creation. Interestingly, plants with toxic alkaloids (when properly administered) are often our most potent medicines. Power plants, such as false hellebore, force us to slow down and approach the herbal kingdom with a bit more respect and awareness.

Harvest Calendar

False hellebore is not recommended for harvesting, except for ornamental purposes in areas that will be undisturbed by children.

Food Use

Absolutely none! False hellebore contains a number of deadly alkaloids, including jervine, protoveratrine, and pseudojervine, and is definitely not "user-friendly" to the hungry. Spring shoots of false hellebore have, on occasion, been eaten by foragers who mistake them for young swamp cabbage, twisted stalk, or wild onion. Consequences include vomiting, diarrhea, stomach pain, and other signs indicating violent poisoning. (See Caution, following, for additional details.)

Young false hellebore shoots are sometimes mistaken for edible spring greens, with disastrous results. (Verna Pratt)

Medicinal Use

Dena'ina Athabascans mash false hellebore root, boil it in water, and then apply the fluid or root itself to aches and pains, wounds, rashes, and other skin ailments. To induce vomiting, a bit of the fluid is drunk, but dosage is critical as too much of the tea can kill the patient. "To get rid of germs in the house," says Kari, the Dena'ina "put a piece of the root on top of a hot wood stove and let it smoke." A stringent set of rules regarding false hellebore have evolved; these include leaving a present in the hole you dig the root from, and saying the "right words" when you harvest and use the plant. Casual experimentation is not advised. As Kari says, "it can kill you if you fool around with it."

Just handling fresh false hellebore can cause severe itching and skin irritations. The dry root, however, has been employed in skin salves for itchy skin afflictions, such as lice; veterinarians administer *Veratrum* decoctions externally to animals troubled by mange.

V. album, in a clinically formulated homeopathic dilution, is used to treat a variety of conditions, ranging from menstrual cramps and

Physical Description

FALSE HELLEBORE: *Veratrum* species; *a.* Grows to 8 feet high; *b.* Leaves have parallel veins and distinct ribs; leaves have a "pleated" look; *c.* Young shoots are stout and have distinct parallel veins; *d. V. viride* (illustrated) has a drooping cluster of flowers. *V. album* and *V. californicum* have an upright spike; *e.* Flowers of *V. viride* are greenish-yellow; flowers of *V. album* are greenish outside and whitish inside. Flowers of *V. californicum* have a distinctive wedge of green at the base of each petal; *f.* POISONOUS! All parts of the plant are toxic.

rheumatic pains to violently destructive forms of insanity. Do not attempt making such a preparation in the home! The commercial homeopathic preparation is available from natural foods stores and homeopathic pharmacies. (See Homeopathy in the back of the book for additional details.)

Historical Use

Turner, in *The Ethnobotany of the Bella Coola Indians of British Columbia,* says Indian hunters would chew false hellebore root. "It would almost kill the eater, but if he recovered, he would henceforth be a great hunter." Hanging roots in the house was said to protect against bad spirits.

Various native groups have regarded false hellebore root as an amulet to ward off mind-stealing demons of the deep, and as a good luck charm to "call the rain" to raise the water level of rivers so salmon could run. During times of Indian warfare, false hellebore had rather sinister applications. Judith Johnson, writing in *MaineLife,* says "some tribes fed the root to prisoners they captured from other tribes. Through this practice they separated the weak from the strong." Survivors were deemed worthy of adoption into the tribe.

Doctors of the nineteenth century prescribed false hellebore root in the treatment of epilepsy, pneumonia, and arteriosclerosis. The plant was also administered as a fever-reducer and sedative.

Earlier in history, Europeans used the herb for poisoning arrows for battle. Greeks, in the first century A.D., mixed the roots with honey to kill rodents. In the 1600s, the powdered dry root was used as snuff, even though such use caused a profusely runny nose. Despite the claim of Elizabethan physician-astronomer-herbalist John Gerard that false hellebore "... ought not to bee given inwardly unto delicate bodies without great correction, but it may bee more safely given unto country people which feed grosly, and have hard, tough and strong bodies," proper medical supervision remains critical. The plant drastically purges the system and depresses heart function, contraindicating hellebore as a home herbal remedy.

Other

False hellebore is sold commercially as an insecticide. Leslie Haskin, in *Wild Flowers of the Pacific Coast*, says one of his most distasteful tasks as a youngster was sprinkling currant shrubs with powdered *Veratrum* root to rid them of worms.

False hellebore thrives in the open spruce forest near my home. I thoroughly enjoy following it through the season, watching progression from shoots to seeds. Those looking for a stately border plant for their wild garden may wish to transplant a specimen.

Caution

False hellebore is deadly for both humans and livestock; pregnant animals that graze the herb, if they survive at all, bear deformed young. After hard frost, however, the foliage is said to be harmless.

Hellebore contains toxic alkaloids, including cevadine, germidine, germitrine, jervine, pseudojervine, rubijervine, vertralbine, and veratroidine. Violent symptoms of poisoning may occur within ten minutes of ingestion; these include numbness of the extremities, vomiting, diarrhea, headache, stomach cramps, and prostration. Medical attention should be sought at once. Vomiting will probably occur naturally, as the plant is a potent emetic, but if need be it can be induced by giving the patient Syrup of Ipecac. (See Treatment of Acute Poisoning in the back of the book.)

Though hellebore is sometimes used in external preparations to kill lice and in anti-itch ointments, some individuals experience severe skin reactions to such use.

Wild Garden Ornamental

In early spring, as false hellebore shoots appear, dig a hole one foot deep and one foot wide surrounding the shoot. Place root clump on a large sheet of plastic and tie ends to keep dirt intact. Move to desired area, keeping in mind the plant will grow to a height of eight feet. Hellebore should be planted in moist soil with some shade in an area that will be undisturbed by children or pets.

These hardy plants can also be propagated by root division or by seed. Wash hands thoroughly after handling the plant. Wearing gloves is highly recommended as skin contact with the fresh plant may cause skin irritation. NOTE: Many of our ornamental plants are highly poisonous ones because they so often have a very distinctive look that we find appealing. Children should be taught to admire from afar.

Field mint can be identified by its opposite leaves, lilac flowers, square stems, and distinctive mint aroma.

Close-up of field mint in flower.

FIELD MINT (*Mentha arvensis* also known as *M. canadensis*)

OTHER NAMES: wild mint, pole mint, brook mint, Indian mint, Canada mint

Mint Family (Labiatae)

Habitat and Range

Field mint habitat varies from fields to moist areas, and banks of streams and lakes. Range extends from central Alaska and the Yukon to California.

Other mints such as spearmint, *M. spicata*, and peppermint, *M. piperita*, can sometimes be found escaped from cultivation.

Mint: Tea Plant and Digestive Aid

There are as many species of *Mentha*, reported a ninth-century writer, as there are sparks from Vulcan's furnace. Even today, skilled botanists find it devilishly difficult to differentiate these innumerable species. Some experts lump the herbs into as few as fifteen species, others nitpick them into as many as two hundred. In northern areas of the Pacific Northwest, foragers are apt to have only one major mint to contend with, namely the wild field mint, *M. arvensis*.

Harvest Calendar

Late spring to early summer: above ground portion. (I clip mint to a height of four to six inches a few times during the season. This provides a continued supply of young, tender growth.)

Food Use

Young mint leaves are a nutritious addition to summer salads; they are high in vitamins A, C, and K, and the minerals iron, calcium, and manganese. Add mint to soups and omelettes; steam mint with new potatoes, baby carrots, or peas for a refreshing flavor. Traditionally, mint spices Mideastern dishes (such as hummus) and Indian cuisine (with chutney). Mint jelly is a standby with lamb, pork, duck, and venison.

Steep *Mentha* leaves for a refreshing hot or iced tea. Place a fresh sprig of mint in beverage glasses (or on meat dishes) as a flavorful

garnish. Herbalist Michael Moore suggests lining cake tins with mint leaves instead of grease; he says this works especially well with angel food and other light cakes.

Medicinal Use

Herbalists recommend mint as an appetite stimulant and digestive aid; try sipping a small glass of mint-flavored wine (or tea) after hearty holiday dinners. Mint is reported therapeutic for upset stomach, nausea, and morning sickness; mint-elder flower tea is recommended for crampy or delayed menstruation.

Applied as a compress, mint is said to relieve headache and other pains. Inhaling mint is a folk remedy substitute for smelling salts. Try simmering mint in a stovetop pan of water if your sinuses are blocked.

Other mint uses include adding leaves to salves for itchy skin conditions, sipping a few drops essential oil of mint diluted in a cup of water to relieve gas, and using mint juice to soothe earaches.

Cosmetic Use

Mint is a fragrant and pleasantly invigorating cosmetic herb. Add it to herbal baths to soothe and soften the skin, and to footbaths if troubled by calluses. For a natural deodorant, splash mint tea on your underarms.

Mint is excellent as an ingredient in emollient face creams. Use leaves in facial steams and masks for dry skin.

Mint vinegar, diluted with water, is a hair rinse for dandruff. Mint mouthwash and toothpaste are common commercial products. Pure mint oil is frequently added to shampoos, massage oils, salves, and soaps, as well as medicines, foods, and liqueurs; the oil is obtained through distillation. It takes three hundred pounds of mint to yield one pound of oil. Making this essential oil is a multimillion-dollar industry.

Historical Use

Mint's botanical name, *Mentha,* has its origins in Greek mythology. Mintho, the nymph who was loved by Pluto, was transformed into a mint plant by Pluto's jealous wife, Proserpine. To ease Minto's sorrow over becoming a lowly

Mint Mask: For Dry Skin

1/4 cup fresh mint
1/2 avocado
2 tablespoons wheat germ oil
2 tablespoons liquid lecithin
1 dropper vitamin E
1 cup mint tea

Place all ingredients (except tea) in blender. Smooth on clean face and throat area. Allow the mask to remain for 15 minutes. Rinse off gently with mint tea.

Physical Description

FIELD MINT: *Mentha arvensis; a.*To 24 inches; *b.* Opposite leaves; leaves usually have fine hairs; *c.* Plant smells minty when bruised; *d.* Square stems; usually hairy. Stem may be simple or branched; *e.* Tight clusters of lilac flowers growing at intersection of leaves and stem; flowers have small lips.

plant, Pluto endowed the nymph-mint with a sweet smell when trampled.

Because of this quality, mint became one of the most famous medieval "strewing herbs." It was placed in ". . . chambers and places of recreation, pleasure and repose," says Gerard, because ". . . the smell rejoiceth the heart of man." In England, it was strewn in courtrooms as an "odor-eater" to protect judges from the stench of their unsanitarily housed prisoners.

Other ancient mint uses included eating the herb as protection from the bites of snakes, scorpions, and mad dogs, and as a cure for melancholy and frigidity. The Arabs reportedly ate mint daily to increase virility; the herb is still a common ingredient in their cuisine.

Inhaling mint fragrance is reputed to stimulate memory. However, mint is most often associated with organs, such as the stomach, which are dominated astrologically by the moon; using mint for indigestion is a centuries-old custom still popular in modern times.

Other

Though mint may not dispel all depression, it should cheer gardeners disheartened by their "black thumbs." The plant is more difficult to control than establish and does exceedingly well in moist soil in sun or partial shade. Roots should be divided in spring or fall. In northern regions, the plant should be mulched in autumn. Every three years the roots should be separated and replanted. Fertilize with nettle tea or seaweed emulsion. Do not apply manure, as it encourages growth of a rust fungus.

Local mint may not have as many species as Vulcan's fiery sparks, but it does have as many uses. Besides all the above, you can add mint to potpourris, dream pillows, homemade soaps, and herbal tobaccos. Mints are well worth welcoming into your indoor or outdoor garden. For variety, you might also want to introduce some of the cultivated *Menthas*, such as spearmint (*M. spicata*), peppermint (*M. piperita*), applemint (*M. gentilis*), orange mint (*M. citrata*), and pineapple mint (*M. rotundifoliavariegata*).

In *A Modern Herbal*, Grieve reports that milk from mint-fed cows and goats will not coagulate properly for cheese-making.

Caution

Since mint is a stimulant, it should be used carefully with overactive children. In *Hygieia*, Parvati states that nursing mothers should avoid mint as the herb may decrease milk supply. Mint is contraindicated for those taking homeopathic preparations, because the herb's oils can neutralize the effectiveness of the remedy.

FIREWEED (*Epilobium angustifolium*)
RIVER BEAUTY (*Epilobium latifolium*)

OTHER NAMES: willow herb, willow-weed, blooming Sally, wild asparagus (*E. angustifolium*); dwarf fireweed, broadleaved fireweed (*E. latifolium*).

Evening Primrose Family (Onagraceae)

Habitat and Range

Habitat varies with species and ranges from burned and logged areas to meadows and gravel bars.

There are dozens of *Epilobium* species distributed in our region. All are reported edible, but fireweed and river beauty are the best known and most commonly consumed species.

Fireweed, *E. angustifolium*, and river beauty, *E. latifolium*, range from northern Alaska and the Yukon to California.

Fireweed and River Beauty: Earth Regenerators

Adele Dawson, in *Health, Happiness, and the Pursuit of Herbs*, describes fireweed as ". . . a badge of nature's rural renewal program. No soil," she says, "is too thin, poor or unlikely for fireweed." The *Epilobiums* do indeed thrive in land that appears inhospitable to all growth. Gravel riverbanks, washed of topsoil by seasonal floods, provide homes for lush patches of florescent-flowered river beauty. Land devastated by fire gives birth to a blaze of fireweed.

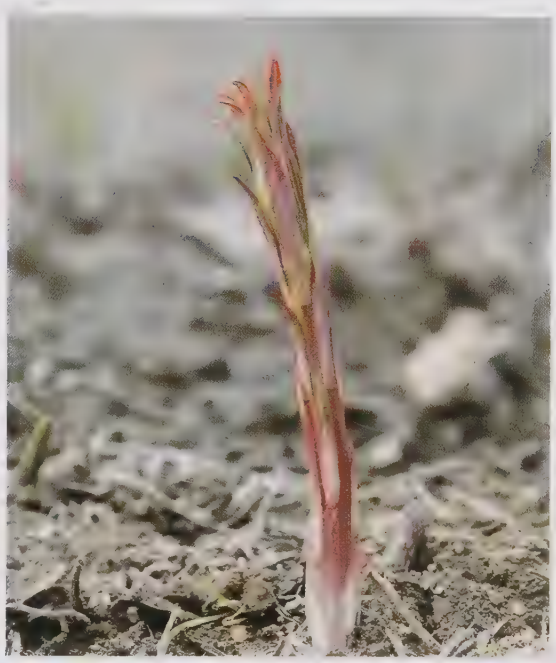
But besides being survivors in landscapes ravaged by natural forces, the plants are ideal for humans looking for emergency supplies. Food, drink, tinder, twine, and medicine are all provided by these abundant and beautiful herbs.

Harvest Calendar

Early spring: shoots.
Late spring: leaves (best before flowering).
Summer: buds and flowers.
Fall: "down" from mature pods; rootstalks.

Food Use

The reddish, asparaguslike stalks of spring fireweed are a welcome vegetable high in



Spring fireweed shoots are prime for salads and potherbs.

Like fireweed, river beauty flowers are an attractive and edible salad garnish. (Jon R. Nickles)

Physical Description

FIREWEED: *Epilobium angustifolium; a.* Grows to 8 feet high; *b.* Flowers are bright, showy, 4-petaled. They are commonly magenta in hue, sometimes pale purple or white; *c.* Lower flowers mature first, forming long pods after blooming; *d.* Leaves are long, narrow, and willowlike with smooth edges. They are distinctly veined and paler underneath. Leaves alternate on stem; *e.* At maturity, pods split open and release downy fluff that carries seed to new locations.

RIVER BEAUTY: *Epilobium latifolium; f.* Generally 4 to 16 inches high; *g.* Flowers are larger and showier than fireweed, commonly magenta in color; *h.* Leaves are long, narrow, and willowlike, grayish-green in color and somewhat succulent; *i.* Stems are commonly branched.

vitamins A and C. They're edible raw, steamed, or stir-fried. Soil conditions affect flavor; I've found spring shoots range from mild to quite bitter. Stronger-flavored stalks can be tamed by pickling, or by blending with milder greens in vegetable pies, fish loaves, and casseroles.

Shoots can also be simmered in stews or prepared like asparagus. Inupiat Mamie Beaver of Kotzebue, Alaska, recommends packing shoots in seal oil (or cooking oil) and then freezing for winter use. River beauty shoots are also edible, and said to be superior to fireweed as potherbs.

Young leaves of both fireweed and river beauty (picked before blossoming) are good mixed with other greens as salad or a vegetable side dish. Unopened buds can be used in the same manner. The flowers add an attractive touch to salads. Raw roots are a popular food of the Siberian Eskimos.

The summer stem of fireweed can be split in half and drawn through the teeth to extract the edible marrow. Various native groups traditionally eat the pith topped with seal oil; today sugar is often substituted. I find the pith quite sweet as is and often enjoy it as a snack when I camp. The pith can also be used as a thickener for puddings and soups.

Fireweed leaf tea is a pleasant campfire beverage; the tea is rather pale in color and slighty sweet in flavor. (Use in moderation, as it can be slightly laxative.) It is a popular beverage of Russian peasants, who call the brew *kaporie.* I like fireweed tea blended with mint or dry wild berries.

Medicinal Use

Fireweed tea is used freely by those troubled by constipation. Infusions are also recommended as spring tonics, and to settle upset stomach.

A fireweed decoction, made by boiling the whole herb, has been used as antispasmodic treatment for relieving whooping cough and asthma. Traditional treatment consists of cooling the decoction, and sipping in wineglassful doses until the spasms pass.

Fireweed leaves and flowers, steeped in oil, are reported to be an excellent external application for piles. The dry powdered roots,

blended with petroleum jelly, have been used to soothe infected insect bites and skin abrasions. JoAnn Nelson of Dillingham, Alaska, says the mashed fresh root is good to draw out boils.

Historical Use

Fireweed leaves were a favorite food of the French Canadian voyageurs. Explorers used the "fluff" from the mature *Epilobium* pods as tinder for starting campfires. Besides being used as tea, fireweed was processed into a stupefying ale (common in Kamchatka in the 1800s); In *A Modern Herbal,* Grieve mentions this was prepared from boiled fireweed pith, cow parsnip stems, and the hallucinogenic fly agaric mushroom *(Agaracus muscarius).*

Ethnobotany of Western Washington reports Puget Sound peoples wove fireweed down with the wool of mountain goats; Quinault and Skokomish tribes blended fireweed and duck feathers for blankets. Alberta's Blackfoot Indians, say Canadian ethnobotanists Turner and Szczawinski, ". . . rubbed fireweed flowers on mittens and rawhide thongs as waterproofing. The inner pith from the stems was dried, powdered, and rubbed on the hands and face in winter as a talc, to prevent chapping of the skin." The stringy fibers that remain after drawing split fireweed stems through the teeth to extract the marrow were woven into twine and fishnets.

According to a legend reported by Leslie Haskin in *Wild Flowers of the Pacific Coast,* Indians in the Alaskan Panhandle were wary of a one-eyed giant who attempted ". . . to deceive the innocent by exchanging useless arrows tipped with fireweed pods for good weapons, thus hoping to gain an advantage and so destroy them."

Halibut Loaf

2 cups chopped fireweed and river beauty shoots
1 cup chopped nettles
2 tablespoons chopped sorrel
3 tablespoons chopped chives
2 cups cooked, deboned halibut
2 cups cooked rice
2 eggs, beaten
2 cups cream of mushroom soup

Mix all ingredients. Place in greased loaf pan. Bake at 350°F for 30 minutes. Serves 3.

Other

Fireweed is the floral emblem of the Yukon Territory. In Canada and Alaska, the herb is popular as a bee flower and garden ornamental.

The entire *Epilobium* genus is an ideal source of nourishment for people caught in a survival situtation. Besides fireweed and river beauty, there are many other small, weedy *Epilobiums* found throughout the Northwest; flower color varies from pink to white or yellow. As the name *Epilobium* indicates, i.e., *epi* meaning upon, *lobium* meaning pod, pods are characteristic of this genus.

Caution

Fireweed tea is known to be somewhat laxative; drink in moderation unless you are specifically seeking this effect.

Geranium plants with their purple flowers and beaklike seed capsules are highly attractive. They do well in flower gardens.

GERANIUM (*Geranium* species)

OTHER NAMES: sticky geranium, cranesbill, stork's bill (*G. erianthum, G. Bicknelli, G. viscosissimum*); herb Robert, stinking cranesbill (*G. Robertianum*)

Geranium Family (Geraniaceae)

Habitat and Range

Geraniums are common in meadows, open forests, and disturbed soil; they grow to above timberline.

G. erianthum ranges from west-central Alaska and the extreme southern Yukon to British Columbia.

The range of *G. Bicknelli* extends from east-central Alaska and the southwest Yukon to Washington.

G. viscosissimum ranges from British Columbia to California.

Numerous *Geranium* species are distributed in our area. Foliage of most can be eaten, though one species likely to be undesirable for food is the unpleasant smelling *G. Robertianum*, commonly called Herb Robert or stinking cranesbill.

Geranium: Root for Bleeding, Flower for Salads

When one thinks of "geraniums," the showy florist's flower often springs to mind. The commercial plant isn't a *Geranium* at all, but a *Pelargonium*. Wild geraniums, on the other hand, are members of the true *Geranium* genus. Though they don't shout for attention in quite the same fashion as the flower shop flora, they're still lovely. As a bonus, they offer a wide variety of applications for enterprising foragers.

Harvest Calendar

Spring to summer: leaves.
Summer: flowers.
Fall: roots.

Food Use

Geranium is one of the wild plants whose leaves, though edible, aren't choice. The leaves can be tossed with other greens in salads or steamed as a potherb, but I most frequently use

them as a filler to stretch supplies of other more tasty and less abundant greens. Chopped and added to soups, vegetable pies, or quiche, the flavors blend and geranium leaves become quite acceptable.

Geranium is best differentiated from the deadly monkshood when flowering occurs. Though the leaves toughen with age, they're still palatable in stews and casseroles. The flowers themselves are a delightful edible garnish for salads.

Medicinal Use

The above-ground portions of geraniums are good ingredients in herbal oils and skin salves. Smith, in "Arctic Pharmacognosia," says that Aleuts boil leaves of *G. erianthum* in water as tea and a sore throat gargle.

Geranium roots are very astringent, constricting tissues and stopping bleeding. *Medicinal Plants of the Mountain West* recommends boiling a teaspoon of powdered root in a cup of water as an enema for hemorrhoids, bleeding piles, and inflamed diverticula, and as a douche for vaginitis. Taken internally, Moore says this may bring about relief ". . . for sick headaches, excess menstruation, or post partum bleeding." The root powder or crushed leaves, mixed with water as a paste, can be applied to skin ulcers and abrasions. The freshly sliced root, adds Moore, ". . . can be used as a first aid for gum or tooth infections, applied directly on the area in pain."

The dried powdered root has also been used as a styptic to stop bleeding (use after shaving); internally, root decoctions have been sipped for stomach ulcers, diarrhea, and dysentery. The clotting action of the herb is attributed to tannic and gallic acids.

Cosmetic Use

The whole herb is suitable in facial steams for clearing the complexion, and in rinses for oily hair. In addition, Jeanne Rose writes in *Herbs & Things* that geranium is a good bath herb ". . . to awaken lazy skin." More than the epidermal layers must be awakened, however, because, the author adds, a geranium bath is ". . . thought to give the bather aphrodisiacal thoughts."

Physical Description

GERANIUM: *Geranium erianthum; a.* Grows to 1 1/2 feet high; *b.* All species have beaklike seedpods. These split and curl and catapult the seeds; *c.* Flowers have 5 petals and 10 stamens. Flowers range from pale purple with dark stripes (*G. erianthum* and *G. Bicknelli*) to pink with white stripes (*G. Robertianum*); *d.* Sepals are hairy. Stems and leaves of *G. viscosissimum* have sticky hairs; *e.* Leaves are in tight basal cluster in spring. Flowering stalks elongate and dwarf the basal growth; *f.* Leaves are palmate, deeply cleft, with 5 to 7 lobes. *G. Robertianum* has leaves with 3 to 5 leaflets.

Vegetable Quiche

1 pie crust
4 eggs
1 1/2 cups milk
1 teaspoon soy sauce
1/2 cup sharp cheddar cheese, grated
2 cups chopped wild greens (geranium leaves, nettle leaves, dandelion leaves, shepherd's purse greens, peeled cow parsnip stems, for example. Adjust according to availability.)

Place single pie crust in greased quiche pan or pie plate. Preheat oven to 350°F. In bowl, beat eggs. Add milk and soy sauce and mix well. Stir in cheese and greens. Pour mixture into pie crust. Bake for 35 minutes, or until quiche is set and golden brown.

Historical Use

It is interesting to note how peoples around the world have often independently discovered such similar applications for plants. The Aleut practice of gargling with root decoctions was also recommended by the *Dispensatory of the United States.* Both Europeans and Meskwaki Indians used geranium roots for gum problems. According to *Earth Medicine, Earth Foods,* Lake Huron Indians commonly "... applied dried, powdered geranium root on blood vessles to promote coagulation." During the Civil War, geranium roots were used internally and externally to stop hemorrhaging.

Other

The botanical name *Geranium* is derived from the Greek *geranos,* for crane; this refers to the characteristic beaklike seedpods said to resemble the head and neck of a crane. Herb Robert (*G. Robertianum*) is named after the eleventh-century healer, Robert of Moleme.

Geranium plants are easily transplanted. The flowers bloom extensively over the summer. The leaves are intricately veined and color beautifully in early fall. With one close at hand to observe, you might get to witness the ripening of the "cranesbill"; when mature, they split suddenly and catapult the seed.

Caution

Due to its high tannic acid content, geranium root taken for extended periods could lead to constipation.

Because geranium leaves are similar to monkshood, foragers must be positive of identity. Harvest leaves and roots only from plants you've identified when in flower.

GOLDENROD (*Solidago* species)

OTHER NAMES: woundwort, blue mountain tea, Aaron's rod

Composite Family (Compositae)

Habitat and Range

A wide variety of goldenrods are distributed in our region. Habitat varies from meadows to open woods and rocky soil. Some species of note include *S. radiata* and *S. canadensis* (Alaska and the Yukon to California), *S. lepida* (Alaska Peninsula to British Columbia), and *S. spathulata* (British Columbia to California).

Goldenrod: Dye and Diuretic

Just mention goldenrod and you're apt to spark sneers and tears from a hay fever sufferer. Contrary to popular belief, however, this wayside weed with the showy yellow blossoms is rarely the culprit. Drinking goldenrod tea daily before the hay fever season begins, in fact, is touted to lessen the malady!

Harvest Calendar

Spring: leaves.
Summer: leaves and flowers.
Late summer to fall: seeds.

Food Use

Goldenrod greens are a traditional potherb. I like adding them (along with the blossoms) to rainy-day summer soups. To thicken autumn stews, add goldenrod seeds. (Do save some for sowing in your wildflower garden!)

For a pleasant brew for camp or home, steep the flowers and/or leaves and sweeten, if desired, with honey. The flowers add a colorful touch to herbal tea blends. Blossoms can also be added to pancake and fritter batters, and bread and biscuit doughs.

Medicinal Use

Culpeper wrote that goldenrod ". . . is inferior to none, both for inward and outward use." Since ancient times, goldenrods have been employed for checking internal and external bleeding. Powdered dry leaves can

Goldenrod is widely distributed throughout the Pacific Northwest.

Golden Crêpes

3/4 cup flour
1/3 cup chopped goldenrod flowers
1 cup milk
2 eggs, beaten
1 teaspoon butter, melted
oil to grease griddle or crêpe pan

In large bowl, blend flour and goldenrod flowers. In small bowl, combine milk, eggs, and butter. Add egg mixture to the flour mixture and stir until smooth. Batter will be thin. Oil crêpe pan lightly and set on medium heat. Pour 3 tablespoons batter onto the greased pan and tilt to spread batter evenly. When golden brown, turn the crêpe and brown its other side. Place in warm oven to keep hot until all crêpes are cooked. Serve topped with maple syrup, jam, or butter, or fill with fish or seafood as a supper dish. Serves 2.

be sprinkled on shaving cuts as a styptic agent.

For insect bites and minor scrapes when in the woods, try applying the fresh, crushed (or chewed) leaves. For an antiseptic wash for wounds, splash the area freely with strained goldenrod tea. Add leaves to salves for skin abrasions and saddle sores.

Herbalist Ed Smith of Oregon describes goldenrod as the "number one herb for the kidneys." Goldenrod is gentle enough for babies, says Smith, but also very soothing and strengthening. Smith tinctures the fresh blossoms to preserve the herb's properties.

In *A Modern Herbal*, Mrs. Grieve reports daily doses of goldenrod tea causing passage of sixty-five kidney stones by a ten-year-old boy. She describes *Solidago* as ". . . astringent and diuretic and efficacious for stones in the bladder."

The Herb Book suggests taking one teaspoon dry leaves in one tablespoon honey internally three times a day for ulcers. *Sauna for Health* says goldenrod tea has a balanced mineral content and recommends the brew for tubercular patients.

Cosmetic Use

Add goldenrod blossoms to facial steams and herbal baths. Blonds favor goldenrod hair rinse for adding highlights.

Historical Use

During the Crusades, goldenrod was

Physical Description

GOLDENROD: *Solidago* species; *a*. Grows 1 to 3 feet; *b*. Flowers are golden in color and composite, that is, containing outer ray flowers and inner disk flowers. Inflorescence varies with species from elongated to short, or broad, dense or few-flowered; *c*. Leaves vary from sharply serrated to sawtoothed, rounded, or nearly entire; *d*. Upper stem leaves are reduced in size in some species. Leaves may be smooth or pubescent; *e*. *S. canadensis* and *S. lepida* have long, creeping rootstocks and lack basal leaves. *S. radiata* and *S. decumbens* have short, thick rootstocks, several basal leaves, and less crowded stem leaves. Consult a flora for a complete description of species.

frequently carried into battles as a wound-healing herb, hence its common name "woundwort." The botanical *Solidago* means "to make whole," in reference to the herb's properties of knitting torn flesh.

During the American Revolution, goldenrod was a popular substitute for the high-taxed English tea. Overseas, the British often bought goldenrod teas and toilet waters, even though the herb grew in profusion in their fields. "Far fetcht and deare bought," complained Gerard, "is best for ladies."

Other

Europeans have long favored goldenrod as a border plant in their gardens, but Americans often regard the hardy showy wildflower as worthless. According to *Hortus Third*, goldenrods ". . . improve under cultivation, but some of them become weedy if the soil is too rich. They are often mistakenly considered a cause of hay fever." In *The Audubon Society Field Guide to North American Wildflowers*, Spellenberg adds that hay fever discomfort is often caused by ". . . pollen from Ragweed (*Ambrosia* species), which are less conspicuous plants with greenish flowers that bloom at the same time."

Besides eating goldenrod greens, sipping goldenrod tea, and highlighting your hair with goldenrod infusions, you can dye your woolens with the blossoms. With chrome as a mordant, a colorfast golden dye is obtained. Goldenrod leaves and flowers can be added to herbal tobaccos, and blossoms to potpourris. Commercially, goldenrod was once cultivated as a domestic source of rubber.

Goldenrod flowers are showy and versatile. Add to tea blends, batters, and soups.

Lupine is a showy wildflower that's adaptable to the home garden. It thrives in even the poorest of soils.

Seeds, like those of garden peas, are in pods. Lupines, however, contain alkaloids that can cause poisoning.

LUPINE (*Lupinus* species)

OTHER NAMES: lupin, sundial, quaker's bonnets (*Lupinus* species); Nootka lupine (*L. nootkatensis*); arctic lupine (*L. arcticus*)

Pea Family (Leguminosae)

Habitat and Range

Meadows, roadsides, gravel bars, and mountain slopes are all suitable habitats for lupine.

Nootka lupine (*L. nootkatensis*) ranges from the Aleutian Islands, south-central Alaska, and the Panhandle to British Columbia.

Arctic lupine (*L. arcticus*), and its various subspecies, range from northern Alaska and the Yukon to Oregon.

Numerous lupines are distributed from the Arctic to California.

Lupine: Improves Soil and Brightens Spirits

Lupines are unquestionably lovely, and a picnic in a lupine field on a sunny summer day is an unforgettable experience. Whether you can picnic ON lupines, however, remains an item of contention.

Though records indicate some lupines have been safely consumed, many references list lupines as poisonous. Due to hybridization, edible *Lupinus* species can concentrate toxic alkaloids, resulting in an unhealthy game of "lupine roulette." It appears that alkaloids are removed by cooking and that toxic principles intensify with age, but until documentation on northwestern species is established, using lupines for food is "not recommended."

Harvest Calendar

Spring to summer: flower and leaves (for potpourris).

Food Use

Though some *Lupinus* species have been used safely, others have been known to poison sheep and cattle. Species hybridization occurs readily, further complicating the safety question. Due to possible poisoning, I do not advise lupine for food use.

Records indicate that in the past, lupine

leaves have been steamed as potherbs, and seeds roasted as coffee substitutes and boiled as vegetables. (See Caution, following.) *Emergency Foods of the Aleutians* recommends peeling fall-harvested roots for survival food, but warns that excess consumption of the woody root fibers could produce stomach and intestinal inflammation. In *Food Plants of British Columbia Indians*, Turner reported rhizomes being collected in spring (before flowering), and roasted as a vegetable. (Consumed raw, a state "resembling drunkenness" resulted from the action of alkaloids.)

Medicinal Use

Infusions of bruised lupine seeds are a traditional wash for scabby skin conditions. *Earth Medicine, Earth Foods* reports that Navajo Indians ". . . employed the lupine as a remedy for sterility." They believed that taking lupines before conception encouraged the birth of female children.

Cosmetic Use

Lupines are a pleasant addition to herbal baths, facial steams, and herbal body oils.

Historical Use

Fielder's Herbal Helper for Hunters, Trappers, and Fishermen mentions that American pioneers and Indians fed small amounts of immature lupine pods to horses to make them spirited. If the horse got too fiery, folklore said all you needed to do was rub lupine seeds in your palm before grabbing the reins, and you would be in perfect control. In Rome, seeds were once used as money in theatrical productions.

Other

Lupine is said to have originated in Egypt, where it was cultivated extensively. Today it ranges from Africa and Asia to Europe and the Americas. In Italy and Sicily, lupine is grown as fodder for cattle, and green manure for sandy soil. In California bushy lupines are planted to prevent erosion of coastal dunes. Mike McBride of Kachemak Bay Wilderness Lodge says that in Alaska, lupine roots are an important spring food source for McNeil River brown bears.

Physical Description

LUPINE: *Lupinus* species; *a*. Can grow to 5 feet, but often 1 to 2 feet in the wild; *b*. Flowers are pealike, and arranged in clusters called racemes. Flowers vary from blue and purple to yellow or white; *c*. Seeds are in dark hairy pods; *d*. Leaves radiate from a central point (palmate). *L. arcticus* has leaflets that are smooth above and pubescent below. *L. nootkatensis* has leaflets with dense white to brown pubescence on BOTH SIDES. *L. Kishei* has long, soft yellowish hairs on leaflets. *L. polyphyllus* has 10 to 18 leaflets. *L. lepidus* has dwarf growth form and hairs that press flat against the leaflets; *e*. Length of leaf stalks (petioles) varies with species.

Lupines are plant pioneers, being among the first herbs to become established after glacial recessions and catastrophic volcanic eruptions. "The oldest known viable seeds, discovered in 1967 frozen in a lemming burrow," says *The Audubon Field Guide to North American Wildflowers,* "are from an arctic lupine, estimated at 10,000 years old; when planted they germinated in 48 hours." Lupine's ability to germinate readily and thrive in hostile environments was once misinterpreted, as is evident from lupine's botanical name. *Lupinus* is derived from the Latin *lupus*, or wolf, alluding to the belief that this plant wolfed nutrients and caused poor soil. To the contrary, lupines are nitrogen-fixers that greatly improve soil conditions. When plowed under, they add significantly to the topsoil.

Besides being botanically interesting, lupines are highly aesthetic. The Nootka lupine so common in south-coastal Alaska is one of the parents of the lovely garden lupines. Plant from seed or root division in the rock garden. Mature plants with long taproots transplant with great difficulty. Under proper conditions in fall, you can hear lupine seedpods popping open, expelling the seeds explosively as they twist.

Besides enjoying lupines in the garden, you can welcome them into the home. I like lupine bouquets as a summer centerpiece for the table. Lupine potpourris are also popular; though I have used standard recipes, specifying amounts and ingredients, my favorite remains Serendipity Potpourri.

Modern researchers might find it profitable to reinvestigate the potentials of lupine. At a German botanical gathering in 1917, guests feasted on lupine soup, lupine steak, lupine bread, cheese, and margarine, followed by lupine coffee and lupine liqueur. Lupine also starred in countless side roles — as soap, paper, lupine-fibered tablecloth, and adhesive. Lupine could well be the wonder-plant successor to soybean.

Caution

Lupine alkaloids (lupinine, lupanine, and sparteine) can severely inflame stomach and intestines. Cows and sheep have been poisoned by overgrazing mature lupine pods and seeds. In *Poisonous Plants of the United States,* Muenscher writes: "the toxic principle of lupines is readily excreted by the kidneys; the poisoning is not cumulative, and animals may eat comparatively large quantities with no bad results if the toxic limit is not reached at any one time." Poisoned animals exhibit nervousness, labored breathing, frothing at the mouth, and convulsions. Lupine is closely related to the locoweeds.

Lupine pods are highly attractive to children. Though internal use is NOT advised, a child who does nibble a few pods is not apt to be in grave danger.

Serendipity Potpourri

One sunny morning (after dew has evaporated)
Lupines (in bloom)
Collecting basket
Peaceful attitude
Gift (sea shell, rock, coin, seeds, or other)
Essential oil
Orrisroot powder

Combine above ingredients. Sit quietly for a few moments and breathe deeply. Smell various flowers. Leave a gift for the plant spirits. Wander freely, mindfully collecting lupines and other flowers. Concentrate on harmonizing with the plant kingdom, mentally "asking permission" to collect blossoms and passing by any that "resist." (You'll notice that some flowers almost fall into your hand while others hang tightly to their stems.) Randomly walk, enjoying the discoveries that appear, and collecting any flowers that call to be picked.

When you return home, spread your flowers on drying racks. When flowers are completely dry, place in pretty jars and decorate with a ribbon for gift-giving. I like adding a few drops of essential oil, to scent the potpourri, and orrisroot powder, to fix the scent. (Both are available from herb shops and natural foods stores.) Smell the fragrant potpourri to calm your spirit when you are under pressure. Keep a Serendipity Potpourri jar on your desk as a reminder of your "sunsational" day.

MONKSHOOD (*Aconitum* species)
DELPHINIUM (*Delphinium* species)

OTHER NAMES: friar's cap, wolfsbane, aconite (*Aconitum* species); larkspur (*Delphinium* species)

Crowfoot Family (Ranunculaceae)

Habitat and Range

Habitat is variable with species, from meadows and thickets to rocky slopes and stream banks.

Aconitum delphinifolium is a monkshood species common throughout Alaska, the Yukon, and British Columbia. *A. columbianum* ranges from British Columbia to California. *A. maximum* is found on the Alaska Peninsula and in the Aleutians.

Tall delphinium, *D. glaucum*, ranges from northeast Alaska and the northern Yukon southward to eastern Washington, and along the Cascades to California. *D. brachycentrum* occurs sporadically through northern and central Alaska. *D. Menziesii* reaches from British Columbia to northern California. Dozens of *Delphinium* species and *Aconitum* variations are distributed through the Pacific Northwest. All species are believed toxic.

Monkshood and Delphiniums: Lovely but Lethal

I feel like a streetside gossip broadcasting "dirty laundry" when I begin rambling about the crowfoots. They're so beautiful a flower, so innocent in appearance that it seems unkind to bandy about the nefarious ways these flowers have been used. But monkshood in particular is so deadly poisonous that it is essential foragers be aware of the hazard. Read on for all the infamous details.

Harvest Calendar

Summer: flowers (for look-at-only potpourris!).

Late summer to fall: seeds of delphinium (for lice medicine).

Fall: roots (for transplanting to home gardens).

NOTE: Do not collect poisonous plants

Though beautiful, monkshood blossoms are deadly. Just one can cause severe distress or even death.

Delphinium flowers are a common garden ornamental. They too are toxic.

Physical Description

MONKSHOOD: *Aconitum* species; *a*. Plants grow 2 to 6 feet tall; *b*. Seed capsules have 3 segments; *c*. Depending on the species, flowers vary from few to many, and in color from pale to vivid blue-purple (sometimes white); *d*. Leaves are palmate and lobed; segments vary from narrow to broad.

DELPHINIUM: *Delphinium* species; *e*. Flowers are purple, blue, or white, bloom from bottom of stem upward; *f*. Seedpods have 3 sections; *g*. Leaves are palmate, generally with 5 to 7 lobes; *h*. Both monkshood and delphinium are extremely POISONOUS.

while collecting edibles. Make certain to wash hands thoroughly after handling.

Food Use

Absolutely none! Oregon herbalist Ed Smith reports tasting a piece of monkshood root the size of a kernel of rice. He chewed it carefully and spit out the juices (a process often safely used with bits of toxic plants to note their astringency, taste, etc.). Doing the test with monkshood resulted in a profound change in heartbeat!

For safety's sake, don't even take a nibble. Though the root is most dangerous, all parts are toxic. Leaves are most deadly before flowering occurs.

Medicinal Use

Monkshood has been used as a heart and nerve sedative, pain reliever, and fever reducer, but it should be strictly regarded as a prescription drug and used under expert medical direction. It contains the infamous alkaloid aconitine; as few as three grains of the root can kill a hefty adult. *The Complete Book of Health Plants* reports aconite is rarely used internally as ". . . safe doses are ineffective and effective doses are toxic." Its main use is external, as an ingredient in liniments and ointments for rheumatic pain. If cracks are present in the skin, however, poisoning and a "feeling of suffocation" can result.

In homeopathic dilution, *Aconite* is a remedy often used for treating colds. (See Homeopathy section for details.)

Delphinium seeds, steeped in rubbing alcohol, vinegar, or "tincture of green soap" (available at pharmacies) yield an effective preparation for killing lice. *Medicinal Plants of the Mountain West* recommends the green soap-delphinium blend as a shampoo for humans and animals affected with the parasitic insects; it should be shampooed in well, and allowed to stand for ten minutes before rinsing. Do not use, however, if red raw patches or any deep irritations are present, as poisoning can result.

Historical Use

Monkshood's botanical name, *Aconitum*, stems from the Greek *akontion*, meaning "a

dart." Since ancient times, peoples have smeared aconite on their arrows and spears for hunting wolves, whales, foxes, and tigers. In medieval times, monkshood was called thung (a name common for any deadly plant) and was used for warfare; the root was placed in water holes and wells to poison water supplies of pursuing armies.

The Herb Book says that witches smeared the root on their broomsticks and bodies, took a dose of delirium-producing belladonna, and then went "flying." On a more mundane plane, aconite roots were mixed with toasted cheese to kill rats.

The botanical (and common) name *Delphinium* is from the Greek *delphin*, meaning dolphin.

An ancient botanical dictionary, says Lewis Clark, in *Wild Flowers of the Pacific Northwest*, attributes the derivation ". . . to the supposed resemblance in the nectary of the plant to imaginary figures of the dolphin." In medieval days, delphinium had the same medicinal use as today — to kill lice.

Other

There are about one hundred *Aconitum* and three hundred *Delphinium* species worldwide. The flowers do well in home gardens, and can be grown from seeds, root divisions, or cuttings. Plant in an area where they won't be mistaken as kitchen herbs.

Crowfoots have been used as a source of natural dye, and as ingredients in potpourris. The blossoms press well and are lovely on notecards.

Caution

Do not take monkshood or delphinium internally without strict medical supervision. Both contain deadly alkaloids that paralyze the central nervous system. Symptoms of poisoning include numbness in the mouth, salivation, chest pain, weakness, irregular heartbeat, and prostration. Death often results within six hours.

To treat monkshood or delphinium poisoning, induce vomiting at once with Syrup of Ipecac, and seek prompt medical attention. (See Treatment of Acute Poisoning.) After vomiting occurs, keep the patient lying down and covered. Though a concoction of "brandy blended with flies that had suppered on monkshood" was once the recommended antidote, today's physicians generally use stomach tubes and emetic agents.

In California, delphinium is the plant responsible for most cattle poisonings; symptoms include bloating and salivation. Sheep are sometimes used in delphinium-rich pastures to mow the pest, as they are less affected by the delphinine alkaloid. *Poisonous Plants of the United States and Canada* adds that the seeds and young plants are most toxic.

Human poisonings have occurred when children nibbled the blossoms and adults mistook the leaves for those of the edible wild geranium (which often shares the same habitat and whose leaves look very similar). The roots have also been mistaken for parsnips, with dire consequences. Let the forager beware!

Floral Notecards

Clear contact paper
Pressed monkshood and delphinium flowers (See Acid Kelp section for directions on making a plant press.)
Notepaper

Cut contact paper the same size as your notecard. Remove backing from contact paper. Carefully lay flowers in desired arrangement on the sticky contact paper. Lay card on top. Repeat steps for additional cards. (Wash hands thoroughly after handling the flowers.)

During cold springs, nettle shoots are often tinged with red. Note the opposite arrangement of leaves, and presence of stinging hairs on the stem.

Nettle flowers are inconspicuous, occurring in small drooping clusters at the junction of leaf and stem.

NETTLE (*Urtica* species)

OTHER NAMES: stinging nettle, burning nettle, seven-minute itch, Indian spinach, common nettle (*Urtica* species); dwarf nettle (*U. urens*)

Nettle Family (Urticaceae)

Habitat and Range

Nettles flourish in thickets and moist soil in forest openings. They are common on old homesteads, in birch forests, and along streams.

U. gracilis (also known as *U. dioica* subspecies *gracilis*), ranges from central and south-central Alaska and the southern Yukon to British Columbia.

U. Lyallii (also known as *U. dioica* variation *Lyallii)* is a common Pacific Northwest nettle; it ranges from south-central Alaska to California.

U. urens occurs on Attu Island in the Aleutian chain in Alaska, and then leapfrogs to British Columbia. It also grows from Washington to California.

Other species of limited distribution include *U. californica* (California), *U. holosericea*, and *U. serra* (Washington to California). All have similar use.

Nettle: Potherb and Plant Fertilizer

As I sit here sipping nettle tea, I wonder how to begin to unravel the story of nettles. Though many today consider *Urtica* an obnoxious weed, its virtues are so numerous that in the tenth century it was revered as a sacred herb. In my home, nettles serve as seasoning, tea, plant fertilizer, shampoo, hair rinse, liniment, and favorite spring green.

Harvest Calendar

Early spring: leaves and stems. Pick the entire above-ground portion (with gloves) until the plant is eight to twelve inches high.

Spring to summer: new growth at the end of the stems. Do not harvest old or bug-infested leaves.

Late summer: seeds.

Fall to spring: rootstocks.

Food Use

Because of their stinging hairs (some researchers attribute the sting to formic acid and others to a histamine compound), nettles should be collected with gloves, and steamed or dried before eating. Some foragers report eating nettles raw and chewing them well. I received a prickly "nettle lip" when trying to nibble raw shoots, so I don't recommend the process! When nettles are steamed lightly or dried well, however, the irritant dissipates and the stinging is eliminated.

Cooked nettles are a choice spring green. As the nettle plants grow, you can pinch off the tender tops; this pruning encourages production of more young growth that provides you with still more vegetables. A nettle patch can be worked in this manner well into the summer. Harvesting old leaves is not recommended; they develop gritty particles called cystoliths that can irritate the kidneys.

Nettles are a traditional food for the "breakup blues." The greens contain significant amounts of protein, chlorophyll, vitamins A, C, and D, and minerals iron, calcium, potassium and manganese. The Self-Heal Herbal Centre of Victoria, British Columbia, says nettles are a perfect spring cleanser because they also contain ". . . a substance called secretin which causes the bowel to slough off its heavy mucous lining from eating the heavier winter foods."

Steamed nettles are delicious, much like spinach in flavor and appearance. Try them topped with garlic, lemon, and olive oil as a side dish. Alaskan Deiv Rector recommends stir-frying nettles in oil with grated ginger, and serving over cooked rice. Creamed nettles on toast is another delicacy. The accompanying is

Greens Supreme

Contributed by Mairiis Davidson-Hollister of Homer, Alaska

4 cups fresh nettles, chopped
Boiling water
1/2 cup grated Parmesan cheese

Place nettles in steamer basket over boiling water. Cook 3 to 5 minutes. Top nettles with Parmesan cheese and serve immediately. Serves 2.

Physical Description

NETTLE: *Urtica* species; *a.* Grows to 7 feet at maturity. The entire plant is edible when young and under 1 foot in height; *b.* Flowers are small and greenish. They grow in drooping clusters at the intersection of leaves and stem; *c.* Leaves are covered with fine, stinging hairs; *d.* Stem is simple and covered with stinging hairs; *e.* Leaves of *U. Lyallii* (illustrated) are heart-shaped. *U. gracilis* has narrower, lance-shaped leaves. *U. urens* has egg-shaped leaves with very short flower clusters.

a dieter's delight — low in calories and high in flavor; in early spring, when I am ravenous for fresh greens, I often eat Greens Supreme as a meal in itself.

Do remember to save nettles' cooking water for making soups and chowders; nettle roots can also be used for making stock. Nettles cooked with fish is a favorite of the Dena'ina Athabascans of Cook Inlet.

Alaskan homesteader Yule Kilcher kneads dry and crumbled nettles into his bread dough; in addition, he cooks dry nettles together with oatmeal for breakfast. I like the dry herb powdered in homemade "herb-salt" blends. Fresh or dry nettles, used alone or with mint, is a pleasant, anytime tea. For a lightweight, energy-packed soup starter for the trail, blend dry nettles with dried garden vegetables (such as carrots, onions, and spinach) and wild vegetables (such as lovage, chives, and sorrel).

Medicinal Use

The California School of Herbal Studies says nettles are one of the highest sources of plant-digestible iron. As potherb or tea, nettles are highly suited to anemics, and menstruating and lactating women. Besides being a blood-building alterative, nettles are reputedly antispasmodic and expectorant and are a specific remedy for asthma. Traditional treatment is twofold: drink the tea and inhale the burning herb.

Though the merits of any smoking are debatable today, those who do puff might consider concocting their own herbal tobacco. Inhaling herbs like nettles, buckbean, and coltsfoot might be far less harmful than taking the highly toxic alkaloid nicotine (a deadly insecticide) into the lungs. (The drawback to the herbal smokes is that they tend to burn hot.)

If you do smoke plants of any kind, you may want to mitigate the damage by other positive habits. Canadian herbalist Don Ollsin recommends nettle seed tea to strengthen the lungs. The brew is given to children susceptible to colds, as well as to patients suffering tuberculosis of the lungs.

As a counterirritant for arthritis, Indians used to whip themselves with nettles. Ollsin adds that in his latest class in British Columbia, "a student got back eighty percent use of a finger by this method." Many folks prefer using nettles for sore muscles and joint inflammation in the gentler form of a liniment.

Nettles, oddly enough, can cure the rash they cause! Just rub fresh nettles between gloved hands and then rub the crushed nettles on the irritated area. When I tried this, my welts vanished within moments. Other herbs helpful for nettle rash are dock, plantain, jewelweed, and the scruffy coating of fiddleheads, but my favorite treatment remains the nettle itself.

Homeopathic preparation of nettles is used for hives, burns, and itching rashes. (See Homeopathy in the back of the book for more information.)

If you nick yourself shaving, sprinkle styptic powder (made from ground, dry nettle, shepherd's purse, yarrow leaves, and burnet roots) on the cut. For internal bleeding while in the bush, the same herbs can be used in tea form. Around English Bay, Alaska, local residents pound nettle rootstocks, heat them on hot rocks, and then place them on wounds to draw out infection.

Cosmetic Use

Nettle leaf tea is a wonderful hair rinse; it promotes growth and helps eliminate dandruff. It also makes a soothing wash for the skin; taken internally, the tea is reputed to help those with eczema.

For a stimulating wake-up bath, place dry nettles in muslin bags and add to your bath water. This circulation-increasing soak is also good for those with arthritis.

Nettle vinegar, diluted with water, is a hair lotion. Herbalist John Lust advocates a hair-grow formula containing nettles and onions soaked in alcohol for two weeks. Strain and apply daily to the hair or bald spot.

Historical Use

Use of nettles dates back to the Bronze Age. When pounded in water, nettles yield fibers that can be twisted into string and woven into strong ropes and fishing nets. The word "net," in fact, is derived from the herb's common name.

According to legend, Pacific Northwest

Indians learned how to net salmon from Spider, who materialized as a man to instruct them in gathering and weaving nettles. In a Hans Christian Andersen fairy tale, nettles were spun into coats by a princess; she used these to break the swan spell cast on her brothers. In the modern world, nettles have been used for making fabric, bed sheets, and paper. During World War II, German soldiers commonly wore uniforms woven from nettle fibers; nettles were also harvested extensively for supplying chlorophyll for medicines.

Urtication, the practice of flogging oneself with nettles, was practiced by medieval monks and by Greek maidens as a penance. Roman soldiers, trying to warm themselves in the cold damp climate of England, also flagellated themselves.

A satisfactory rennet for cheese-making can be made by boiling four cups of salt with six cups of strong nettle tea. In *A Modern Herbal*, Grieve relates, "the same juice, if rubbed liberally into small seams in leaky wooden tubs coagulates and will render them once more watertight."

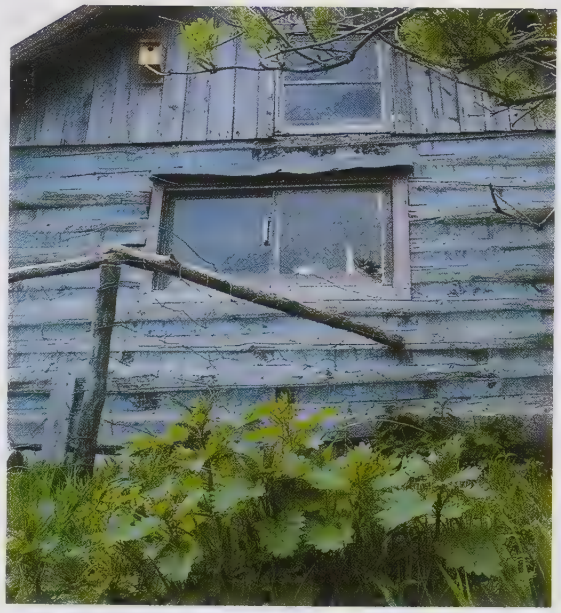
Nettles have been used to dye materials ranging from cloth to Easter eggs. Hues vary from dark green to yellow, depending on the plant part and mordant used.

Other

A wild nettle patch indicates good soil; the British often plant orchards in nettle-rich areas. Nettles are commonly cultivated in European gardens (as well as in my Alaskan one). They can be grown from root cuttings or seed. Seeds are available commercially (see the Herb Directory in the back of the book). My nettle-rich neighbors generally permit me to dig spring shoots for transplanting.

Companion Plants and How to Use Them reports that nettles change the chemical process and essential oil content of neighboring crops. Herb growers commonly mix nettles with mint, valerian, and sage to bolster oil production. Health of tomatoes and strawberries is also said to be enhanced by nettle companions.

Composed of seven percent nitrogen, nettles are an excellent addition to compost. Nettle tea is a superb fertilizer for house and garden plants; I've given it to plants suffering transplant shock and noticed almost immediate improvement. When mixed with a small amount of liquid dish soap, the solution adheres to the leaves; this foliar spray is reported effective against aphids and plant lice.



Nettles often grow in dense patches. By harvesting the tops, growth is stimulated and the season of edibility extended.

Dry nettles are forty percent protein; they're an inexpensive and effective additive in the diet of livestock. Shinier coats, higher milk production, and greater resistance to disease are all reported by owners feeding nettle hay to their livestock. Dry nettle leaves and seeds, added to poultry feed, are said to increase egg production.

If you want fresh nettles during the long northern winter, transplant some rootstalks into your cellar. The blanched shoots are a delicacy. Dry nettles are another winter food source. They can be purchased (for about ten dollars per pound) in natural foods stores and herb shops. I highly recommend drying them yourself!

Caution

Harvesting nettles with gloves is recommended, as the raw plant can inject irritating compounds into the skin. Eat only the young growth of the plant; old leaves contain cystoliths that can irritate the kidneys. Steam or dry nettles before taking internally.

Raspberry fruits can be adapted to countless kitchen creations.

White five-petaled flowers, three to five leaflets, and bristly stems make raspberry distinctive.

RASPBERRY (*Rubus idaeus*)

OTHER NAMES: garden raspberry, European raspberry, American red raspberry, framboise

Rose Family (Rosaceae)

Habitat and Range

Raspberries range in fields and thickets from central Alaska and the northern Yukon southward to Oregon.

Raspberry: Family Favorite

According to a Chinese herbal book, eating raspberries clears your complexion, cures your cold, increases your virility (or fertility), stimulates hair growth, and heightens your body's vigor. When savoring raspberries, you can rest assured that you are "treating" yourself in more ways than one!

Harvest Calendar

Spring: shoots.
Spring to summer: leaves.
Spring and fall: roots.
Summer: fruits.

Food Use

Raspberry fruits, as everyone knows, are indescribably delicious. Besides flavor, they're laden with vitamins B and C and minerals magnesium, calcium, iron, and phosphorus. Try them fresh, frozen, or canned. Mashed, dried berries yield a children-pleasing fruit leather. Fruits can also be dried whole as a raisin substitute.

Use raspberries freely in pies, breads, cakes, puddings, sauces, and candies. Ferment the fruits for gourmet wines and liqueurs; nonimbibers can savor the traditional European beverage — raspberry syrup blended with soda water and served on the rocks.

The high pectin fruits jell readily and make superior preserves. Raspberry vinegar is also highly popular; use in salad dressings, pickled beets, and sweet-and-sour cabbage recipes. It also makes a superior basting sauce for chicken and rabbit.

Other raspberry products are the peeled spring shoots (nibble raw, or chop and add to

stir-fries and soups) and raspberry leaves (use alone or with dry berries to make teas). Blend dry leaves with other Alaskan herbs to custom-craft a special beverage blend for your family. (See Caution, following.)

Medicinal Use

Hygieia calls raspberry ". . . the pregnant woman's best herbal friend." Parvati adds that raspberry leaves contain fragrine, a substance that tones the reproductive organs. Raspberry leaf tea, taken freely (two or three cups daily) in early pregnancy, is reported to diminish morning sickness. During labor, its relaxant properties on pelvic muscles diminish pain and facilitate birth. After delivery, the raspberry leaf infusions are drunk to reduce swelling and bleeding. The brew is also popular with women troubled by excess menstrual flow. For vaginal discharges such as leucorrhea, the tea is used as a douche.

Drinking raspberry leaf tea is considered to strengthen the heart and the body at large. The soothing brew is a good bedtime beverage; it's gently sedative. It's also advised for children's stomach upset.

As an external agent, leaf infusions make a good wash for skin eruptions. To cleanse a wound or to remove proud flesh, apply a poultice of raspberry leaves and slippery elm (available from herb suppliers). Gargle with the tea for mouth ulcers and sore throat.

To reduce fever in children and adults, sip wineglassfuls of raspberry juice (or one tablespoon of raspberry vinegar diluted in water). A root decoction is advised for dysentery and diarrhea. In the pharmaceutical industry, raspberry fruits are often used to flavor medicines.

Cosmetic Use

To reduce tartar on your teeth, brush with raspberry syrup. Afterward, rinse thoroughly to remove all traces of the sweetener.

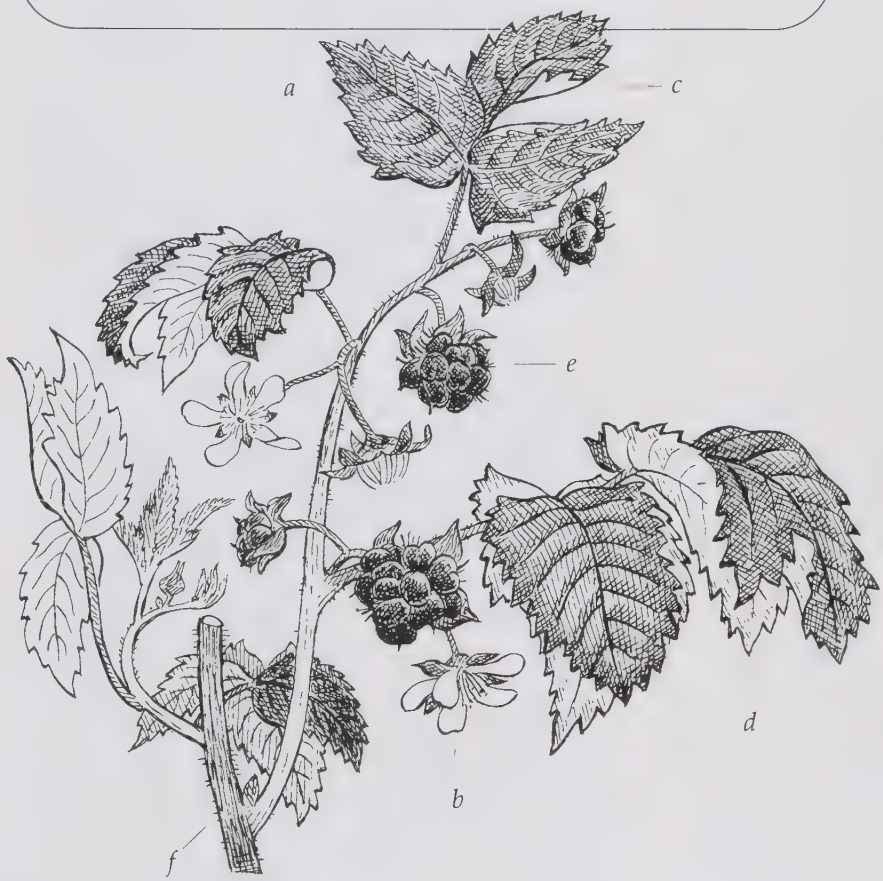
Add raspberry leaves to herbal baths and to facial steams and facial packs for oily skin. For a rinse reputed to darken the hair, massage the scalp with a strong leaf decoction; rinse well after fifteen minutes.

Raspberry Vinegar

Recipe contributed by Beverly Cornet of McGrath, Alaska

1/2 gallon white vinegar
1 pound fresh raspberries (or frozen and thawed)

Pour vinegar into stainless steel or enamel pot. Add raspberries. Let stand overnight. In morning, heat to boiling. Simmer uncovered 5 minutes. Cool. Strain. Pour into clean bottles. Cap tightly. Label. This vinegar can be used immediately, but its flavor improves with age. Packaged in decorative bottles, it is excellent for gift-giving.



Physical Description

RASPBERRY: *Rubus idaeus; a.*Grows 1 1/2 to 6 feet high; *b.* Flowers have 5 white petals; *c.* Leaflets number 3 to 5; *d.* Leaflets have irregular teeth; are whitish below with soft hairs; *e.* Fruit red, juicy, sweet; falls off after ripening fully; *f.* Stems have bristles.

Historical Use

In New England, farmers traditionally predicted the severity of the coming winter by natural indicators such as the thickness of skin on tomatoes, the height of beaver dams, and the thickness of winter coats on farm animals. In Alaska, Dena'ina Athabascans use the height of the summer raspberry canes as a basis for predicting snowfall; short canes foretell scanty snow cover, and tall ones assure a deep, white winter.

Other

Juliette de Bairacli Levy, in *The Complete Herbal Book for the Dog*, quotes a gypsy herbal document that advises, "let all creatures with young, human and animal, take freely of raspberry herb." For retention of puppies, Levy advises bitches be given two tablespoons powdered raspberry leaves mixed with molasses and water (at four-hour intervals for several days). *Herbal Medications* states that *R. idaeus* "... has been shown in animals to relax the smooth muscle of the uterus and intestine." Dog breeders who administer raspberry tea freely throughout their animals' pregnancies report easy whelping.

The northwestern raspberry, *R. idaeus*, is the same species that grows wild in Europe; it is frequently cultivated in gardens. *A Modern Herbal* recommends propagating raspberries by layering and placing the herbs two feet apart in rows spaced four to five feet apart. In the fall, the old canes should be cut back and fertilizer applied.

Raspberry is prolific in disturbed soil. In Fairbanks, Alaska, I found the shrubs growing abundantly on berms behind a new parking lot at the University. When new ground is tilled or disturbed by floods, raspberries often appear in abundance. If natural plant succession is allowed to occur, the light-loving shrubs eventually give way to taller plants.

Raspberry's botanical name, *Rubus*, describes the plant as a "bramble"; an alternate translation is "red." Both meanings describe this prickly shrub with the ruby-hued fruit. Some botanists insist *idaeus* means "small"; others believe that like *Vaccinium vitis idaea* (lingonberry), the specific name refers to Mount Ida of Crete. Fossilized remains of raspberries have been found in Switzerland that verify the herb's existence at the time of Christ. It is highly likely raspberries also grew, with lingonberries, on slopes in ancient Crete.

Caution

Use raspberry leaves only when fresh or fully dry. During the wilting process, leaves develop toxic substances. (NOTE: Eleanor Viereck of Fairbanks, Alaska, dries leaves by cutting stalks and hanging to dry. It is easy to detach fully dried leaves by running one's hands over the stalks; if moisture remains, the leaves hang on tightly.)

I've found no evidence of toxic reactions from raspberry tea. However, kidney and bladder irritation is possible (due to the presence of tannins in the leaves) if large amounts are continually ingested.

ROSE (*Rosa* species)

OTHER NAMES: wild rose, prickly rose (*R. acicularis*); Nootka rose (*R. nutkana*); Wood rose (*R. Woodsii*); sweetbrier rose (*R. rubiginosa*); dwarf woodland rose (*R. gymnocarpa*)

Rose Family (Rosaceae)

Habitat and Range

Roses thrive in habitats as variable as meadows, forests, mountain slopes, and bogs.

Prickly rose, *R. acicularis*, is common from the Brooks Range and northern Yukon to British Columbia.

Nootka rose, *R. nutkana*, ranges from south-central and southeast Alaska to California.

Numerous other rose species, including *R. rubiginosa* and *R. gymnocarpa* (British Columbia to California) are distributed throughout the region.

Rose: Herb for All Seasons

"A rose is a rose is a rose." Whether wild or domestic, roses are one of the easiest herbs to identify. With over one hundred species worldwide, these fragrant flowers with their thorny stems are a familiar sight. What's less well known are the multitudinous uses of these common shrubs. Do you need a tasty jam or a vitamin-crammed tea or a Christmas tree garland or a beauty bath? Roses can fill all these needs, and countless more!

Harvest Calendar

Spring: tender shoots.

Late spring through midsummer: leaves, rosebuds, petals.

Fall or spring: bark, stems, roots.

After frost: rose hips.

Food Use

The peeled spring shoots are a tender trail nibble. Rose petals, with the bitter white base removed, are another wilderness snack. Try petals in salads, sandwich spreads, and omelettes for color and flavor. Steep them in hot water for a pleasant tea, or infuse in cold water with lemon and honey for a refreshing julep. A *Foxfire 3* report recommends dipping petals in

After the first hard frost is the ideal time for gathering rose hips. (Janet R. Klein)

The five pink petals, golden ring of stamens, and distinct fragrance make roses easy to identify.

whiskey and frying in oil for a tasty treat. Rose petals are the basis for a delightful jelly. A stick of butter, wrapped in rose petals and placed in a jar in a cool place for a few days, yields a sweet-scented spread delicious on breakfast muffins and biscuits. Don't forget to sample rose honey; just simmer petals in honey for fifteen minutes, then strain and spread on toast.

The adaptable fruits of the rose, called hips or haws, are renowned for their nutritional content. Just three marble-sized hips have more vitamin C than a whole orange. In addition, they're high in vitamins A, B, E, and K, and in the minerals calcium, iron, silica, and phosphorus. Though hips are best in early fall after the first frosts, they persist on the stems throughout the winter — making them an invaluable emergency food. With repeated freezing they become quite soft, but their vitamin content remains substantial. In the old days, hips kept countless natives and explorers alive during winter famines; today they still provide emergency fare for the lost or stranded.

Not everyone relishes the taste or seedy texture of hips fresh from the shrub, but dried as tea, and spiked with orange slices, cinnamon, and cloves, hips gain in popularity. Preserves, especially those blended with berries or spices, are another favorite.

To seed or not to deseed rose hips depends greatly on your personal preference and intended use. Generally you'll want to at least remove the tails (withered sepals) from the hips. You then have the option of using the hips whole or halved, with or without seeds. Seed-filled hips, by the way, are fine for tea so long as you strain the brew well before serving to filter any hairs that might cause intestinal irritation. (See Caution, following.)

To deseed hips, slice them in half and scoop out the seedy-hairy interior. Artist R. W. Tyler favors pinching the flesh and skin from the whole fresh hip; he dries these seed-free flakes and cooks them in hot cereals.

When making jellies and jams, deseeding is unnecessary. Just cover whole hips with water and simmer until soft. Strain well through a jelly bag, reserving the juice. Cover the hips again with fresh water and simmer an additional thirty minutes. Then combine both strained fluids. You now have rose hip juice, which can be sweetened and bottled in sterile jars for a breakfast beverage. Or you can add pectin and convert into jelly. Another option is

Physical Description

ROSE: *Rosa* species; *a.* Shrub to 8 feet high; *b.* Flowers showy and fragrant. Petals pink and 5 in number. Yellow stamens are arranged in a circle; *c.* Leaflets smooth on top, somewhat downy underneath (*R. Woodsii* is smooth on both sides); *d.* Stems may be very prickly (*R. acicularis*) or with fewer flatter thorns (*R. nutkana*); *e.* Leaves are compound with 5 to 9 leaflets; *f.* Fruits (hips) are cherry-sized. Shape is variable, round to oval. They are orange when immature, red when ripe; *g.* CROSS-SECTION OF HIP; *h.* Dried sepals; *i.* Dried stamens; *j.* Dried stigma; *k.* Seeds; *l.* Fibers; *m.* Skin; *n.* Flesh; *o.* The edible parts; *p.* Stem.

rose hip syrup, made by simmering the hips until the fluid is reduced to half the original amount. To each cup of this thick juice, add one-half cup honey. This syrup keeps well and is superb on pancakes, french toast, and ice cream.

The pulp remaining in your jelly bag can be run through a food mill to remove seeds and skins. The processed pulp can be flavored with sweetener and spices, and thickened with pectin for jam. Add grated orange, rind and all, for marmalade. Apple-hip jam is another good combination; if sour fruit is cooked with the pulp, you won't need added pectin. If you should ever have a jar that just won't set up, it makes fine syrup.

Other uses for hips include drying them as a raisin substitute, making rose hip punch, brewing rose hip wine, stewing hips for soup, simmering them with rhubarb for pudding, and candying hips for fruit cakes. For a unique dessert, bake a "pumpkin" pie using rose hip pulp in place of the pumpkin. Delicious!

Medicinal Use

Rose petal tea has been used internally as a healing beverage and externally as a wash for ulcerous skin conditions. *Tom Brown's Field Guide to Wilderness Survival* suggests placing moistened rose petals on cuts and scrapes; as they dry, they form a wilderness bandage. Petals are traditional eyewash ingredients and are still common in commercial eye preparations.

Cloths soaked in rose petal tea are said to be an effective compress for relieving headaches. Inhaling rose oil is also traditional for headache relief, as well as for nausea and insomnia. For a summer headache, relax in a rose patch and smell the flowers!

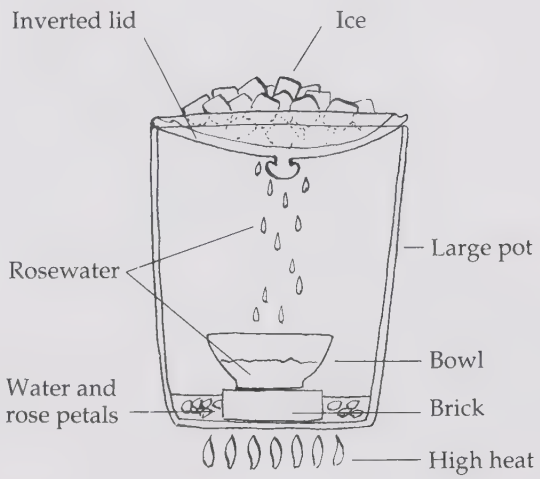
Rose honey soothes a sore throat. A good gargle is two to three tablespoons rose vinegar mixed in a glass of warm water; rose vinegar also makes a douche, after-bath splash, facial rinse, natural deodorant, and salad dressing! To prepare, just steep petals in vinegar for two weeks and then strain.

Herbalists often prescribe rose hip syrup for anemia; the mineral-rich hips are believed to stimulate production of red blood cells. Rose hip tea, besides being a pleasant everyday beverage, is especially appropriate for coughs and colds. Since ancient times, it's been advocated for women with cramps and uterine difficulties. Hips are touted to be a heart tonic, and are often added to herbal formulas for bladder and kidney problems due to their antibacterial and soothing properties. Hip seeds are added to liniments for arthritis.

Dena'ina Athabascans burn rose thorns from the stems and branches and then boil them in water until a dark brew results. This is drunk for ". . . colds, fever, stomach trouble, weak blood, and when a woman has a hard time menstruating."

Rosewater

Place a brick or flat rock in a large canning pot. Surround the brick with rose petals and cover the petals with water. Keep the water level BELOW the top of the brick. Place an empty stainless steel bowl on the brick. On top of the canning pot, invert a lid and fill it with ice. Place canning pot on high heat until all water is evaporated from the petals and distilled into the bowl. The pure rosewater can be used as is as a hair rinse or facial splash. Add rosewater to baby's bath. For a soothing skin lotion, mix with an equal part of glycerin.



Cosmetic Use

Rose buds and blossoms have long been revered for their moisturizing ability; they are one of the best herbs for irritated skin. Rose oils are ideal for the delicate breast tissue and for stretch marks and wrinkles. Rose-elder flower oil is famous as a wrinkle-remover. To prepare, place dry rose petals and elder flowers in a glass jar and cover with almond oil. Leave in the sun for ten days, shaking daily. Then strain the herbs, rebottle the oil, add vitamin E, and store in a cold dark closet. Use daily.

Rosewater is another cosmetic product that can be prepared with simple equipment.

Rose facial steams are softening and moisturizing; just pour boiling water over a bowl of rose petals and let the steam bathe your face. When done, add the bowl contents to a tub of water for a luxurious soak.

Roses are traditional in dream pillows for warding off melancholy and insomnia. Add roses to potpourris and place in decorative containers on your desk to brighten your spirits. Rose sachets are excellent in closet or clothes trunk to freshen and scent your garments. Hang in your outhouse for a breath of spring!

Historical Use

Besides being the "flower of flowers" and the symbol for beauty and love, the rose (from the Greek *rhodon* meaning red) signifies silence. The expression *sub rosa* originated in Rome, where roses were suspended above a table or engraved on the ceiling to indicate the confidentiality of all conversations.

Otto of rose, or rose attar, is the pure essential oil that scents the most precious of perfumes. Attar is said to have been discovered at an extravagant wedding in 1612. As the bridal couple paddled through their garden canal filled with roses, they noticed that the action of the sun had sparked formation of an oily scum that smelled exquisite. Deliberately manufacturing this oil is the focus of thriving modern industries in France and Bulgaria. Since over two tons of roses are required to make a mere eight ounces of oil, the unadulterated product is rare and costly.

During World War II, rose hips gained national attention when citrus shipments to Europe were blocked. Nearly five tons of hips were gathered by the British in 1943 alone; these were made into syrup and distributed by the Ministry of Health as a nutritional aid for the population.

Other

For a natural Christmas decoration, string rose hips and popcorn and wrap the garlands around your tree. After the holiday, use the dry hips for tea, or place the garlands outside as a treat for the feathered.

Birds love rose hips and help distribute the seeds. Wild roses are ideal ornamentals, being both attractive and versatile. The Nootka rose also makes ideal stock for grafting cultivated species. If you wish to enhance the health and fragrance of roses, companion plant them with chives, onions, or garlic. The sulfur secretions of these plants are believed to enhance rose vigor as well as fragrance. Parsley plants love roses, too.

British Columbia herbalist Don Ollsin reports that local Indian groups ". . . had great respect for plants with thorns, and used the rose to clean out a house where someone had died." Walls were washed with rose petal tea, and a broom of stems was used to sweep the floor.

If you need still more uses for roses, experiment with the shrub for natural dyes, and add rose roots to herbal smoking blends. I've always commented in plant classes that the only part of the rose I haven't found use for is the thorns. However, Margaret Wichl of Arctic Village, Alaska, informs me that Athabascans insert rose thorns into warts. After two to three days, the wart disappears.

Caution

Though I've eaten entire rose hips on many a hike with no adverse results, the hairs surrounding the seeds are said to irritate intestinal linings when eaten in excess. Though this hairy covering was once used medicinally to rid the system of roundworms, it is said to be responsible for an "itchy bottom" condition when too much is consumed. I recommend straining rose hip tea with a fine filter when seeds are left intact.

STRAWBERRY (*Fragaria* species)

OTHER NAMES: wood strawberry, mountain strawberry, earth mulberry (*Fragaria* species); beach strawberry (*F. chiloensis*); wild strawberry (*F. virginiana*)

Rose Family (Rosaceae)

Habitat and Range

F. chiloensis favors coastal beaches. *F. virginiana* grows on open slopes and edges of forests.

Beach strawberry, *F. chiloensis*, inhabits coastal beaches from the Aleutian Islands and south-central Alaska and the Alaska Panhandle, southward to California.

Wild strawberry, *F. virginiana*, and its variations, thrive in forest openings and on slopes from central Alaska and the Yukon to California.

Other species are of local interest, such as *F. californica* of California.

Strawberry: Beauty Aid Inside and Out

Strawberry's botanical name, *Fragaria*, stems from the Latin *fragrai*, meaning fragrant — an apt description for the foliage of wild strawberries. Strawberries do more than merely smell sweet; they taste it too! Though the domesticated plants produce larger fruits, foraging for wildlings remains highly popular as man has yet to duplicate the sensational flavor of the plants grown purely by nature.

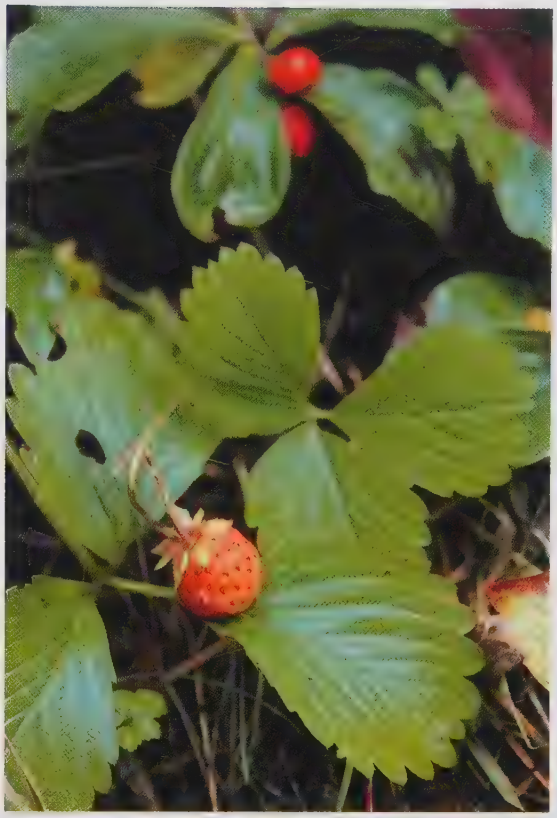
Harvesting wild strawberries does have its problems. Besides the tedium of picking the small fruits, you have to contend with the competition. Birds and bears, not to mention mice, hares, and squirrels, relish the fruits as much as humans. Keep a hawk-eyed watch on your favorite patch or your crop may mysteriously "vaporize" overnight.

Harvest Calendar

Spring: shoots.
Spring to early fall: leaves.
Summer: fruits when red and juicy.

Food Use

What can you do with strawberries



Strawberry growing wild with bunchberry at the forest edge.

Though small, wild strawberries are a delicacy not to be forgotten. (Janet R. Klein)

Strawberry Freezer Jam

4 cups fresh, crushed strawberries
6 cups sugar
2 packages pectin
2 cups water

Mix strawberries and sugar. Let stand 15 to 20 minutes, stirring occasionally. Combine pectin and water. Bring to a boil, stirring constantly. Cook for 1 minute. Pour pectin-water mixture over strawberry-sugar mixture and stir well. Pour into sterile jars and cover. Let stand overnight. In morning place jar in refrigerator; remainder should be stored in freezer. Use within 1 month if refrigerated.

besides snack on the fresh, hulled fruits, savor shortcake swimming in whipped cream, and sip frothy fruit milkshakes? Lots! Add fresh berries to punches and pies; blend with yogurt for refreshing summer soups. Mix crushed berries with sparkling water as a healthful cocktail. Top with cream for a simple but simply sensational dessert.

If you have a surplus, dry the berries or freeze them in syrup for winter use. To preserve maximum flavor, make uncooked freezer jams for your morning toast.

Strawberries are far more than just delicious. They also add substantial amounts of vitamins A and C, and minerals sulfur, calcium, potassium, and iron to your diet.

In addition to the famous fruits, spring shoots can be eaten raw or cooked. You can add fresh or thoroughly dried leaves, as well as dried mashed fruits, to herbal tea blends.

Medicinal Use

Strawberry leaf tea is famed as a tonic beverage, and is ideal for pregnant women. In *Hygieia*, Parvati describes the leaves as ". . . a proven aid in preventing abortion." The tea is also said to stimulate milk production of nursing mothers, and to settle stomachs of those troubled by morning sickness. *Dian Dincin Buchman's Herbal Medicine* adds that strawberry leaf tea, taken over a long period of time, will eventually regulate the menstrual cycle.

The tea's reputation of healing spongy gums and tightening loose teeth is probably due to the plant's high vitamin C content. The beverage is gentle, and safe for infants and children. Externally, leaf tea is used as an antiseptic

Physical Description

STRAWBERRY: *Fragaria* species; *a*. Grows 2 to 8 inches high; *b*. Flowers have 5 white petals, 5 pointed green sepals, and yellow anthers; flowers grow on a stalk separate from leaves; *c*. Leaflets (3 per stalk) are dark green on top, with silky hairs below; *d*. Fruit is red, sweet, juicy, with seeds embedded on the surface; *e*. Low-growing perennial with thick rhizome; *f*. Leaflets are leathery for beach strawberry (*F. chiloensis*), thin for wild strawberry (*F. virginiana*); *g*. Plants send out brown runners (stolons) that root at the joints.

wash for eczema and wounds, a douche for vaginitis, and a gargle for sore throat and mouth ulcers.

Strawberry fruits are a gentle laxative; roots and leaves, on the other hand, are astringent and help to tighten loose bowels. In *The Herb Book,* Lust recommends the root-leaf infusion for diarrhea, dysentery, and urinary tract problems. The fruits have refrigerant properties; to soothe sunburn pain, rub the mashed fruits on the afflicted area. Herbalist Ed Smith of Oregon advises those troubled by arthritis and gout to add strawberries to their diet.

Cosmetic Use

Castleton, in *Handbook for Natural Beauty,* says that strawberries have the same pH as the skin, and advises mixing a cup of water with a cup of mashed fruits and spreading on the face, hands, arms, shoulders, and chest before bed. In the morning, adds Castleton, "after rinsing the dried strawberry juice, your shoulders and bosom will be as fair as any maiden's."

If you prefer, you can try a strawberry and cream facial or strawberry and cream herbal bath. These were favorites of the court contemporaries of Marie Antoinette. For a less extravagant, but pleasant, cosmetic bath, add a generous amount of leaves to your bath water. Leaves are also pleasant in footbaths after a long hike.

To clean tartar off your teeth, advises the California School of Herbal Studies, rub the berries on your teeth and let the juice sit for five minutes. Afterward, brush your teeth thoroughly with baking soda and water.

Historical Use

The strawberry has been used to symbolize rather opposite virtues. In religious art, it freqently appeared in conjunction with the Blessed Virgin to indicate purity and righteousness. In medieval secular paintings the fruit portrayed sensuality, often accompanying art of the naked and the naughty.

Through the ages, strawberries have been used in medical treatments ranging from the believable to the bizarre. In the Middle Ages, fruits were recommended "to destroy the web in a man's eyes." Today the antiseptic fruits are still used for eye inflammations and infections. I sincerely doubt, however, that you will wish to sample the ancient recipe of the *Hortus Sanitatis.* As a gargle for throat ulcers, it instructs you to blend strawberry and mulberry juice with vinegar, plantain water, and the "dung of a white dog!"

Other

The fragrant strawberry adapts well to the home garden. Plant from root cuttings in a moist, shady, and slightly acidic area; sidedress with manure in the fall. The plants do especially well when companion planted with borage.

The common name strawberry stems from the Anglo-Saxon *strewberige,* and refers to the tangle of greenery in which the sweet berries are "strewn." Strawberries are members of the rose family. There are some twenty species worldwide. The delectable fruit is actually the enlarged receptacle of the flower.

If you can't keep a hawk-eyed watch on your favorite strawberry patch, botanist Boyd Shaffer says all you need do is hang a fourteen-inch silhouette of a sharp-shinned hawk in hunting profile (with tail folded). This will keep bird predators from devouring the fruits!

Caution

Make certain strawberry leaves are either fresh or thoroughly dried before using as tea. Leaves are moderately toxic when merely wilted.

Eating fresh strawberries (wild or domestic) can spark severe skin rashes in sensitive individuals. *Hygieia* says this is a sign "... that excess acid in the system is being driven out through the skin faster than other channels of elimination."

Chive buds open to a dense cluster of pink to purple flowers. Snippets of the round hollow leaves of chives are good in salads and soups.

Death camass bulbs look similar to chives but lack the onion scent. As the name indicates, death camass is deadly. (Norma W. Dudiak)

WILD CHIVE (*Allium schoenoprasum*)
WILD ONION (*Allium* species)
DEATH CAMASS (*Zygadenus* species)

OTHER NAMES: onion grass, garden chive (*Allium schoenoprasum*); white camass, crow poison, black snakeroot, hog potato (*Zygadenus* species)

Lily Family (Liliaceae)

Habitat and Range

A. schoenoprasum is a wild chive that ranges from the Brooks Range and the central Yukon south to northeast Oregon. Numerous edible Allium species grow in meadows and grassy slopes from British Columbia to California; collectively these are referred to as wild onion. Bulbs and bruised leaves have a strong onion scent.

As the common name indicates, death camass is deadly. *Z. elegans* is common in open woods and grassy areas from northern Alaska and the Yukon south to Oregon. California alone has more than seven *Zygadenus* species and subspecies, all with yellowish to greenish-white flowers. All are believed toxic.

Wild Chive, Wild Onion, and Death Camass: A Tale of Three Lilies

Besides being beautiful to behold, lilies offer foragers the opportunity to sharpen their identification skills. The lily family has many edible and toxic members. Wild chives, wild onions and death camass are a case in point. The first camass I ever saw was growing, appropriately enough, in a cemetery, the precise place where foragers who harvest lilies indiscriminately are apt to rest.

Differentiating the safe *Allium* species from the deadly *Zygadenus* isn't overwhelmingly difficult, but it does require (literally) a nose for detail. Chives are distinctive with their round, hollow leaves, but wild onion and death camass both have similar flat, linear leaves. Camass leaves lack a distinctive scent, but leaves of the edible wild onion smell strongly of onion when bruised. As always, the flowers themselves are the key identifiers. Study the illustration for a clear understanding of the

difference between chives and onion flowers (arranged in umbels) and camass flowers (arranged in racemes).

Harvest Calendar

Spring to summer: leaves of wild chive and wild onion.

Summer: buds and flowers of wild chive and wild onion.

Fall or spring: chive and onion bulbs. (CAUTION: Be positive of identity! These are the seasons when most death camass poisonings occur.)

Food Use

Fresh chopped chive and onion leaves add zesty flavor to salads, soups, and quiche. Mixed with sour cream, they delightfully dress a baked potato. Add fresh chives and onions to sandwiches, spreads, and vegetable dips. Try them sautéed in butter and spread on fish. Various native groups favor chives boiled with meat or fish.

Physical Description

WILD CHIVE: *Allium schoenoprasum;* *a*. Dense umbrellalike arrangement of pink to purple flowers; *b*. Petals and sepals become papery after flowering; *c*. Leaves are long, narrow, and hollow. Grow to 1 1/2 feet long. Plant has a single to several bulbs with an onionlike scent. Bulbs have white papery scales. *d*. Wild onion is the common name given to other species in the *Allium* genus. Like the deadly death camass, leaves are long, narrow, and flat (similar to the death camass). Flowers are in umbrellalike clusters (umbels); flower color varies from rose purple to creamy white. All wild onions emit a strong onion scent when leaves or bulbs are bruised.

DEATH CAMASS: *Zygadenus elegans*; *e*. Flowers are greenish-white with 6 petals, and are arranged in upright clusters called racemes. Grows to 2 feet high; *f*. Leaves are long, narrow, and flat. Leaves lack an onion odor; *g*. Seeds are in capsules; *h*. Plant grows from a bulb that lacks an onion odor. POISONOUS!

Chive-Speckled Eggs

6 eggs
3 tablespoons fresh chopped chives
3 tablespoons cottage cheese
2 tablespoons milk
3 chive flowers

Mix ingredients (except flowers) well. Cook in greased skillet on medium heat, stirring constantly until set. Serve immediately, garnishing with chive flowers. Serves 2 to 3.

Chives go exceptionally well with eggs. Chive-Speckled Eggs makes a simple but tasty and attractive breakfast.

Add a handful of chopped chives or onions to steamed vegetables, along with chive buds. The flowers can be simmered in soups, eaten in salads, or dipped in batter and fried as fritters.

For a delicious herb butter, mix chives or onions with soft butter and then roll (in a waxed paper tube) and freeze. Slice chilled pats of the herb butter to top a vegetable dish or barbecued fish. (The soft, unfrozen butter can also be used.)

Bulbs can be used freely in recipes in place of commercial onions. But beware any bulb that lacks an oniony odor—it could well be the deadly death camass. Harvest only if you are positive of identity.

A Dena'ina Athabascan, Peter Kalifornsky, told me he preserves two to three gallons of chives for cooking use each winter; his method is to alternate layers of chives and salt and place in a cool place. Siberian Eskimos use airtight sealskin pokes for chive storage.

You can also dry or freeze chives for year-round use. To dry, just chop chives and place on a cookie sheet in a 200°F oven until free of moisture. Powder as a seasoning, or use the chopped chives in soups and yogurt dips. To freeze fresh chives, just place in plastic bags (whole or chopped). If you will be storing them for more than a month, blanch briefly (30 to 45 seconds) before freezing.

Medicinal Use

Iron-rich chive and onion greens have sometimes been used as a dietary supplement for anemics; the plants are also believed to stimulate digestion. Western Indians used crushed chive and onion bulbs to alleviate pain and swelling of insect stings. Juice from the bulbs is antiseptic and can be applied to disinfect wounds.

Historical Use

Earth Medicine, Earth Foods records that death camass was once used as an external medicine. The Blackfoot Indians applied "... a wet, bound dressing of the pulped bulbs of the poisonous death camass." This was used to relieve the pain of bruises, sprains, and rheumatism.

As noted in *Kuuvanmiit Subsistence,* chive use among the Kobuk River Eskimo "... gave the Onion Portage archaeological site its name." The plants grew abundantly along the gravel beach there and were frequently used in native fish soups and broths.

Other

Chives have been cultivated since the Middle Ages. They are a hardy perennial that adapts easily to the home garden. To transplant, break off clumps of about one-half dozen chive bulbs and space the clusters one foot apart. Clip closely three to four times through the season for a steady supply of tender leaves.

Chives and onions are good companion plants. Place near peas and lettuce to repel aphids. Chive-onion tea is recommended as spray for powdered mildew. If you're troubled by mosquitoes while gardening, try rubbing crushed onion or chive greens or bulbs on your skin as a repellent.

Chives, added to poultry feed, are believed to enhance the health of chickens and turkeys. They're also delightful added to poultry stuffing for that holiday bird!

Caution

Chives have been known to cause stomach upset in animals that overgraze the plants. Anore Jones of Ambler, writing in *The Kotzebue Basin,*

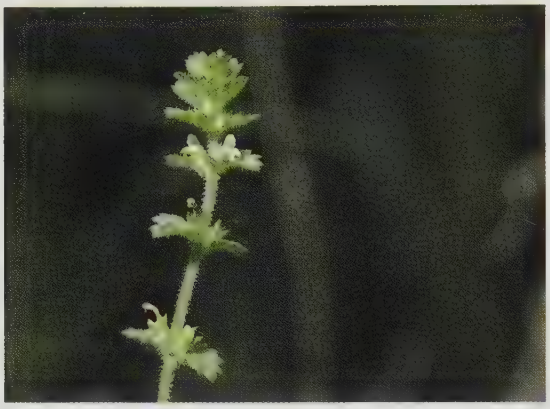
warns that chives can also lead to human digestive disturbance "... when picked too old or stored too long."

Death camass should NEVER be consumed. Though the bulbs are said to contain the highest concentration of alkaloids, children reportedly have been poisoned just from eating the flowers and leaves. Countless sheep have died from grazing on these plants; cattle and horses are affected too. Hogs, curiously enough, are believed immune; hence the death camass nickname "hog potato." *Poisonous Plants of the United States and Canada* says that recommended treatment for a 100-pound sheep is 2 mg atropine sulfate and 8 mg picrotoxin; in some areas this is sold commercially as "death-camass tablets."

Death camass contains zygadenine, an alkaloid that causes salivation, vomiting, muscular weakness, decreased body temperature, impaired breathing, coma, and usually death. If poisoned, seek prompt medical attention. Vomiting should be induced at once. (See Treatment of Acute Poisoning in the back of the book for directions.)

Clumps of chives can be divided in spring or fall; chive bulbs have an onion scent and flavor.

Yellow rattle is a common meadow "weed" in southern Alaska.



As its name suggests, eyebright is traditionally used as an eyewash.

YELLOW RATTLE (*Rhianthus minor*)
EYEBRIGHT (*Euphrasia* species)

OTHER NAMES: pennygrass, rattlegrass (*Rhianthus* species)

Figwort Family (Scrophulariaceae)

Habitat and Range

Meadows and moist slopes are prime habitats for both yellow rattle and eyebright.

R. minor, yellow rattle, ranges from western Alaska and the Aleutian Islands coastally to British Columbia. *R. crista-galli* ranges from Washington to Oregon.

Eyebright, *E. mollis* also known as *E. officinalis* variation *mollis*, ranges from the Aleutian Islands and Alaska Peninsula coastally to the northern Alaska Panhandle; it also occurs occasionally in the western Cascades.

E. disjuncta also known as *E. arctica* variation *disjuncta*, is a taller species ranging from Interior Alaska and the southwest Yukon to British Columbia.

Yellow Rattle and Eyebright: Eye Herbs and Tobacco Substitutes

Yellow rattle gets its common name from its mature seeds that "rattle" in their papery capsules; the genus name *Rhianthus* is Greek for "nose-flower" and refers to the beaklike corolla of the flowering herb. Eyebright is a traditional sight-strengthening herb. The genus name,

Physical Description

YELLOW RATTLE: *Rhianthus minor; a.* Grows 6 to 24 inches high; *b.* Flower petals are yellow with violet teeth; sepals are flattened; *c.* Stiff, wedge-shaped leaves with large teeth. Leaves are in opposite arrangement; *d.* Seeds "rattle" when mature seedpods are shaken.

EYEBRIGHT: *Euphrasia* species; *e.* Grows 2 to 8 inches; *f.* Stem of *E. mollis* has short, white downy hairs; upper part of *E. disjuncta* has gland-tipped hairs; *g.* Eyebright has long spaces between sets of leaves (internodes) in the lower and middle portions. (Short internodes in the upper portion.) Petals are white with purple lines and purplish upper lip.

Euphrasia, translates as "gladness," an apt description of how you would feel if your weak eyes were made strong by an eyebright wash.

Harvest Calendar

Summer: the flowering herb.

Food Use

There is no reported food use for eyebright or yellow rattle.

Medicinal Use

E. mollis is simply a variation of the famous European eyebright (*E. officinalis*), the species used to treat eye disorders. For a wilderness eyewash, either the south-ranging *E. mollis* or north-ranging *E. disjuncta* could be used.

John Gerard, the Elizabethan physician-herbalist, wrote in his *Herbal* in 1597 that *Euphrasia* is much commended for the eyes:

> Being taken itselfe alone, or anyway else, it preserves the sight, and being feeble & lost it restores the same.
>
> Eye-bright stamped and laid upon the eyes, or the juice thereof mixed with white wine, and dropped into the eyes, or the distilled water, taketh away the darknesse and dimnesse of the eyes, and cleareth the sight.

Nicholas Culpeper, in the seventeen century, added that "if the herb was as much used as it is neglected, it would half spoil the spectacle maker's trade." In the twentieth century, Ed Berg of Homer, Alaska, reports treating children's pinkeye with one drop *Euphrasia* tincture in one eyewash cup of water, accompanied with a dose or two of homeopathic *Euphrasia* 30x tablets. (See Homeopathy section at back of book for additional information.)

Rhianthus has also been reported to be an effective substitute for eyebright. Both herbs have been used as an internal tea for colds and an external wash for the eyes.

Eyebright Eyewash

1 teaspoon eyebright
2 cups boiling water

Ideally, eyebright should be fresh and in flower. Snip herb with scissors into small pieces. Steep eyebright in boiling water. Let infusion cool to a comfortable temperature and then strain well. The infusion can be applied to the eyes by an eyecup. Open and close your eyes a number of times while in contact with the eyebright fluids. Repeat the process three or four times. An alternate method consists of placing the fluids in a basin. Place your face in the infusion; open and close your eyes several times while your face is immersed. Repeat three or four times.

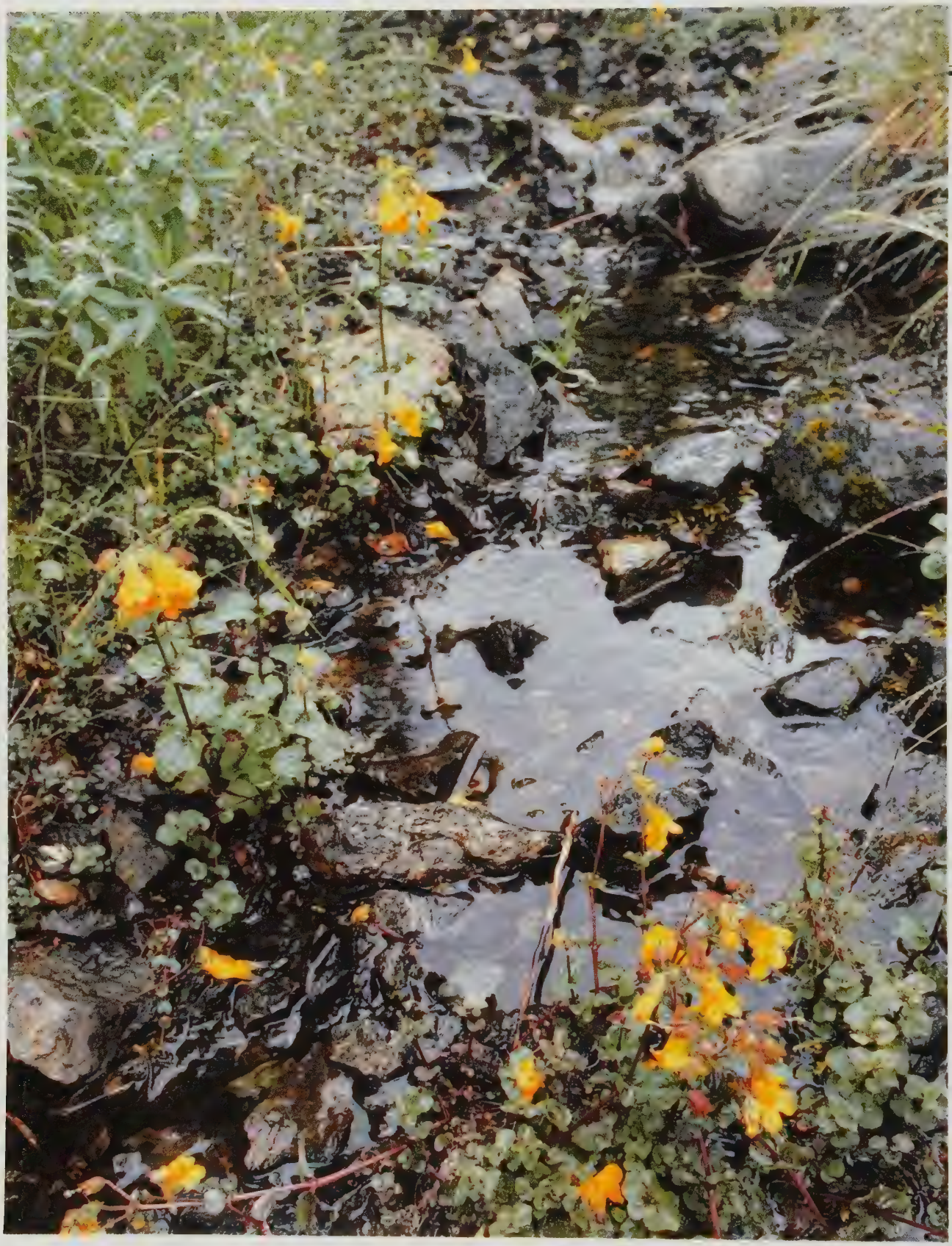
Use as a wash for snow blindness, dirt in the eyes, irritation from contact lenses, or redness.

Other

Yellow rattle and eyebright are both semiparasitic plants. Though they contain chlorophyll and have the appearance of a normal flowering plant, their roots send out suckers that entwine grass roots. Where contact occurs, the enterprising herbs establish nodules that penetrate the grass roots. In this manner they poach water and minerals intended for sustenance of the grasses. Since eyebright and yellow rattle are annuals and die back in autumn, the hardy perennial grasses generally withstand the impact of their summer parasites. In cultivated grass fields, though, the parasites are commonly exterminated so the grasses may flourish unimpeded.

Yellow rattle adds an interesting accent to vases of summer wildflowers. The mature "rattles" could also be used to entertain a cranky child (or a bored adult).

Eyebright is a traditional ingredient in herbal smoking blends. Yellow rattle might also be acceptable, but I leave the test to those who puff.



Monkey flowers thrive on the edges of brooks and rivers.

Stream Banks, Creek Shores, Moist Bluffs, and Wet Rocky Places

And the Wild is calling, calling . . . let us go.

——ROBERT SERVICE

Following a river upstream to its source is a hiker's delight. "Water comes from a faucet" was my childish city wisdom (later expanded to include visions of a city reservoir). "Water comes from a well" is its country counterpart. But actually witnessing water that flows from a mountain snowfield or gushes from an opening in an alpine rock offers a special connection to, and appreciation of, the pure water Earth gives us so freely.

Rivers and creeks, like bogs, are ideal vantages from which to see the natural world unfold. Watching a water ouzel dipping for insects, meeting a wolverine, and quenching my thirst with icy water from a mountain spring are just a few of the joys I've experienced as I've followed streams to their sources.

On hikes along streams and creeks, one commonly finds plants such as alum root, monkeyflower, and spring beauty. Saxifrage, the "rock-breaker," favors places wet and rocky. Coltsfoot ranges in elevation from lowlands to alpine, but again, a creek or water source appears to be its most familiar partner.

Alum root begins its life cycle as a cluster of long-stalked leaves. Note the flowering stalks beginning to elongate and form buds.

Mordanting Fabric

1/2 cup scrubbed, chopped alum root
1 gallon water
8 ounces yarn (or fabric)

Place alum root in pot with water and yarn. Bring to boil. Simmer 2 hours. Remove from heat and let stand overnight. In morning, remove yarn and rinse well. Proceed to dye bath, or dry for storage. This process prepares the yarn for holding the colors of the dye.

ALUM ROOT (*Heuchera* species)

OTHER NAMES: smooth heuchera, alpine heuchera, mountain saxifrage (*H. glabra*); small-flowered alum root (*H. micrantha*)

Saxifrage Family (Saxifragaceae)

Habitat and Range

Alum root thrives on stream banks and in wet rocky places.

H. glabra ranges from the Alaska Peninsula and south-central Alaska coastally through the Panhandle to Oregon.

H. micrantha and *H. cylindrica* are distributed from British Columbia to California. Other species of local distribution and similar use also occur.

Alum Root: Mordant and Astringent Medicine

Alum is commonly used as a mordant, that is, a substance to make dyes colorfast. Use of the chemically manufactured crystalline powder, potassium aluminum sulfate, is common today but craftspeople still often prefer the plant-produced dye assistant. Though the alum "of choice" occurs in the western deserts near sulfur springs, we do have satisfactory substitutes in the Pacific Northwest with plants in the *Heuchera* genus.

Harvest Calendar

Spring to early summer: leaves (for food use).

Fall to early spring: root. (If you harvest just the lower section of root, you can often replant the crown successfully.)

Food Use

Leaves of alum root are edible, though not choice. I find them rather tough raw, but palatable chopped and added to soups and vegetable pies.

Medicinal Use

Meskwakis and other Indian tribes, reports *Earth Medicine, Earth Foods*, applied powdered alum root to cuts to stop bleeding, and to skin sores to promote healing. Various Northwest Indians drank the root tea as a tonic beverage.

Heuchera was an official remedy in the *United States Pharmacopoeia* from 1880 to 1882.

Michael Moore, in *Medicinal Plants of the Mountain West*, advocates boiling one teaspoon of chopped alum root in water for twenty minutes and taking for stomach flu, especially when symptoms of diarrhea and dry vomiting are present. Moore recommends the finely ground root as first aid ". . . for cuts and abrasions, promoting almost instant clotting."

The powdered root is antiseptic. For a baby powder for diaper rash blend one cup arrowroot powder (available from natural foods stores) with three teaspoons alum root powder.

When camping, one could apply the mashed fresh root as a poultice for infected wounds. *Wild Edible Plants of Western North America* says that eating the raw root is an effective cure for diarrhea caused by drinking alkaline water.

Cosmetic Use

The macerated root can be dabbed on pimples. The chopped root is excellent in facial steams for oily skin. For athlete's foot, blend alum root powder with white clay.

Other

The plant's botanical name honors the German medical professor, Dr. Johann von Heucher. The common name refers to the natural mordant, alum, contained in the root.

Nature's Colors by Ida Grae is an excellent reference for those interested in additional details of dyeing with natural materials. (NOTE: Club moss is another natural mordant; if desired, it can be substituted in the accompanying recipe.)

Caution

The plant's root contains nine percent to twenty percent tannins. *Herbal Medications* warns that tannins are a gastrointestinal irritant and are also known to cause kidney and liver failure. Consuming more than five to ten grams of this plant material can be hazardous. Common black tea also contains tannins, so as always, moderation is the key.

People with sensitive skin have also been known to be allergic to alum.

Physical Description

ALUM ROOT: *Heuchera glabra* (illustrated); *a*. Flowering stalks may reach 20 inches high; *b*. Flowers are small, pinkish to greenish-white with 5 stamens; *c*. Leaves are deeply indented at base; *d*. Leaves are on long stalks (petioles) that are 2 to 3 times as long as the leaf blade; *e*. Root is thick.

Coltsfoot flowers appear before the leaves mature.

COLTSFOOT (*Petasites* species, also known as *Tussilago* species)

OTHER NAMES: sweet coltsfoot, butterbur, coughwort, British tobacco, flower velure, pestilence-wort, son before father, owl's blanket, wolverine's foot

Composite Family (Compositae)

Habitat and Range

Habitat is extremely variable, from stream banks and wet tundra to moist meadows and alpine slopes.

Petasites species frequently form hybrid swarms, making positive species identification difficult. The genus, however, is distinctive and plants may be used interchangeably for home herbal purposes.

Noteworthy regional species include *P. sagittatus* (Alaska and the Yukon to British Columbia and eastern Washington), *P. hyperboreus* (Alaska and the Yukon to British Columbia and western Cascades), *P. frigidus* (Alaska and the Yukon to British Columbia), *P. palmatus* (the Yukon to California), and *P. japonicus* (British Columbia).

Coltsfoot: Antispasmodic for Coughs and Asthma

Though many botanists adopt *Petasites* as the accepted botanical name for coltsfoot, others prefer the generic name, *Tussilago.* (And still other botanists consider the plants two separate genera!) Categorize the herb as you please, but do become familiar with the plant long famed for its cough-relieving abilities.

Harvest Calendar

Early spring: flowering stems.
Summer: leaves.
Spring or autumn: rootstocks.

Food Use

Coltsfoot's flowering stems make a tasty spring vegetable; steam them and dress with garlic butter or cheese sauce. Batter and fry as floral fritters, or chop and add to casseroles and soups. Jim Greenough and Eileen Helmstetter,

in *Cooking Alaskan*, say that they sauté the young buds and mix with grayling.

Young leaves are also edible, though the felty texture isn't agreeable to all. Wild foods enthusiast Boyd Shaffer prepares coltsfoot for tea-making by drying the herb, and then whizzing it in a blender. The felty leaf backing balls up and can easily be discarded.

Flora of Alaska and Neighboring Territories says the roasted roots of *P. frigidus* are eaten by the Siberian Eskimos. Grace Johnson of Nome, Alaska, reports placing the large summer leaves on top of vegetable kegs to prevent mold.

Medicinal Use

The first time I tried coltsfoot, I was alone in the bush with a relentless, hacking cough that made sleep impossible. Knowing that coltsfoot is reputed to soothe a cough, I headed for the moist spruce woods by the river, and collected coltsfoot to make a syrup. After two small doses, the coughing ceased and I was able to enjoy some regenerative sleep.

Coltsfoot syrups, teas, and tinctures are all recommended for whooping cough, asthma, bronchial congestion, and shortness of breath. Oregon herbalist Ed Smith says *Petasites* species contains petasin, a highly effective antispasmodic. Smith highly recommends coltsfoot for croup and lung problems as well as menstrual cramps. For pain formulas, coltsfoot can be combined with willow bark.

Externally, coltsfoot decoctions are a wash for skin eruptions and leg ulcers. Poultices of leaves or grated root are traditional for running sores, insect bites, swelling, and arthritic pain. The herb can be made into a salve for ulcerous sores or hemorrhoids.

Cosmetic Use

Use coltsfoot in facial steams and herbal baths. To reduce baggy swelling under the eyes or soothe broken veins, apply a coltsfoot compress (soak a cloth in the cooled tea), and lie back and relax.

The ancients used coltsfoot as a beautifier for "ladies of quality." Culpeper says that the "powder of the roots taketh away all spots and blemishes of the skin. It were well," he adds, "if

Physical Description

COLTSFOOT: *Petasites* species; *a*. Flowering stem (scape) grows to 12 inches high; *b*. Flowers appear before leaves fully develop. Flower heads may be purplish, white, or yellow; *c*. Stem has reddish scales; *d*. The pistillate flower heads develop into white dandelionlike puffs; the staminate flower heads wither; *e*. Leaves are dark green above, felty and whitish below. They vary from thumb-sized to more than a foot in length; *f*. Leaf shape varies from triangular to kidney-shaped; lobes may be shallowly or deeply indented; *g*. Grows from a creeping rootstock.

Coltsfoot Cough Syrup

1 cup fresh coltsfoot leaves
2 cups water
1 cup honey

Simmer leaves in water until 1 cup of fluid remains. Strain, discarding herbs. Add honey and heat until mixture becomes thick and syrupy. Take 1 teaspoon as needed to soothe a cough or sore throat. Keep leftover syrup in a cool place.

gentlewomen would keep this root preserved to help their poor neighbors."

Historical Use

When green *Petasites* leaves are rolled into balls, dried, and smouldered, they produce a salty ash. Control over the coltsfoot "salt supply," reports *Earth Medicine, Earth Foods*, was a cause of tribal rivalry and numerous battles between Yuki and Wailakis tribes in northern California.

Overseas, coltsfoot was so widely used that it became the official symbol of the French pharmacies. A coltsfoot leaf was painted on doors to advertise the apothecary's presence to the illiterate.

As the nicknames "baccy plant" and "British tobacco" indicate, coltsfoot was a popular smoking herb. In England, the dry leaves and flowers were often mixed with buckbean, eyebright, chamomile, lavender, thyme, and rosemary. Though the merits of smoking anything is questioned highly today, ancients believed that inhaling coltsfoot smoke through a pipe or reed was cooling, soothing, and relaxing to congested lungs. The treatment was often prescribed to asthmatics. Deiv Rector of Homer, Alaska, says that after trying repeatedly to relieve bronchial congestion, he resorted to smoking coltsfoot and quickly cleared the condition.

Butterbur is another ancient coltsfoot name, and refers to its pre-refrigeration use as a covering for butter. On a camping trip you can use the broad leaves as a protective wrap for fish and leftovers.

Other

Dena'ina Athabascans refer to coltsfoot as "wolverine's foot" and "owl's blanket." The felty underside of the leaves would certainly make a cozy bird bed; goldfinches, in fact, are reported to line their nests with the fuzz.

The nickname "son before father" refers to coltsfoot's unusual habit of developing flowers BEFORE leaves. The fragrant, early blooming flowers provide bees with some of the first nectar of the season; in Scandinavia the herb is often planted near hives. (You'll note that some coltsfoot plants only produce leaves; these

sprout from underground offshoots of the main stem.)

Another use for coltsfoot is as a natural dye. The leaves, with alum as a mordant, yield a yellow-green dye for wool; with *copperas* a green hue results.

In the Interior I've found coltsfoot leaves one and one-half feet long and eight inches wide; it was probably such a specimen that led an early botanist to name the plant after a *petasos* (Greek hat). Coltsfoot's habitat, like its size, is highly variable. Though I traditionally associate the herb with moist ground along creeks, the plant thrives in damp meadows, coniferous woods, and tundra. I've also discovered coltsfoot on stony alpine ridges; these mature leaves, like those on the wet Barrow tundra, were the size of my thumbnail. Only a gnome would find these particular *Petasites* suitable as a "broad-brimmed hat!"

Caution

Though coltsfoot is generally regarded as quite safe in moderation, it is not recommended for extended use in high dosages. Like comfrey, the plant contains pyrrolizidine alkaloids that can irritate the liver, causing lesions if taken in excess. *Alaska's Wilderness Medicines* warns that large amounts of coltsfoot tea may spark abortion.

Leaf shape varies from triangular to kidney-shaped with shallow or deep lobes. Coltsfoot leaves are felty on the underside.

Jewelweed flowers are a distinctive addition to the home wildflower garden.

JEWELWEED (*Impatiens* species)

OTHER NAMES: snapweed, touch-me-not, slipperweed, quick-in-the-hand (*Impatiens* species); common touch-me-not (*I. noli-tangere*)

Touch-Me-Not Family (Balsaminaceae)

Habitat and Range

Damp, shady areas and stream banks are suitable habitats for jewelweed.

I. noli-tangere occurs sporadically from central and western Alaska to south-central and the Panhandle. It also ranges through British Columbia and into northwest Washington.

I. Balfourii is a purple-flowered species found in California. *I occidentalis* ranges from California to western Washington.

Other Pacific Northwest species include *I. aurella* and *I. glandulifera* (British Columbia to Washington), *I. capensis* and *I. escalcarata* (British Columbia to Oregon), *I. parviflora* (British Columbia).

Jewelweed: Children's Delight and Rash Reliever

My memory of jewelweed dates back more than two decades to a friend's farm in Dunstable, Massachusetts. My sisters and I loved touching the plant's ripe seedpods and watching the capsules catapult the seeds. The dramatic seed propulsion is reason for jewelweed's botanical name, *Impatiens* (impatient) *noli-tangere* (no touch), and common name of touch-me-not.

Harvest Calendar

Spring to early summer: young shoots and leaves.

Summer: seeds.

Food Use

Jewelweed greens, collected when less than one foot tall, make a good cooked vegetable. Cook in a change of water, and discard the cooking fluids. The greens, prepared in this fashion, are safe for consumption and quite tasty when blended with a cream sauce and served on toast. Rarebit is a favorite in my

household, and can be prepared with jewelweed, nettles, or other wild greens.

Jewelweed seeds can be nibbled raw or cooked. They are extremely tedious to collect in quantity but might be suitable as a trail snack. Foragers should avoid consuming large quantities of jewelweed seeds (or greens) on a steady basis. (See Caution, following.)

Medicinal Use

Jewelweed is perhaps best known as an itch-relieving treatment for poison ivy. Some ivy victims crush the herb and rub the plant directly on their sores. Others express the juice and apply it to the irritation. Another method entails boiling jewelweed stems and leaves and washing with the decoction; the late Euell Gibbons advised freezing the decoction so the remedy was available whenever needed.

Though poison ivy is lacking in Alaska, nettles and cow parsnips abound. Rash-prone people might try bathing in a jewelweed herbal bath before gardening near these skin-irritating herbs. This is reported to be a good preventive.

Jewelweed has fungicidal properties and has been used to treat athlete's foot. The fresh herb, boiled in lard, makes a salve said to be effective on hemorrhoids. The expressed juice is recommended for warts and ringworm.

Cosmetic Use

Jewelweed makes a good hair rinse for those troubled by itchy scalp. Add the greens to baths for a skin-soothing soak. *Jeanne Rose's Herbal Body Book* writes that jewelweed juice has been used to stain fingernails red.

Historical Use

Earth Medicine, Earth Foods reports that Potawatomi Indians used jewelweed juice to relieve poison ivy. Blackfoot and Omaha tribes rubbed the crushed plants on skin rashes and eczema.

Other

Jewelweed is an attractive ornamental and a good honey flower. Plant seeds in your garden in moist soil and partial shade. In many areas, it is grown to attract goldfinches and other birds that relish jewelweed seeds. The

Jewel Rarebit

1 cup chopped jewelweed shoots and leaves
2 cups water for first cooking
2 cups water for second cooking
3 tablespoons butter
3 tablespoons flour
1/2 cup flat beer
1 cup milk
1/2 cup grated Mozzarella cheese
4 slices toasted bread
4 strips cooked bacon, drained (optional)

In pan, combine jewelweed and water. Bring to boil. Reduce heat and simmer 5 minutes. Drain and discard water. Add fresh water and bring to a boil. Reduce heat and simmer 3 more minutes. Drain and discard water. In skillet, melt butter. Stir in flour until a paste forms. Slowly add flat beer, until mixture is creamy. Add milk slowly, stirring constantly. Bring to a boil and stir until mixture thickens (about 1 minute). Remove from heat and stir in cheese and jewelweed. Serve on toast. Top with bacon slices if desired. Serves 2.

whole plant is used as a source of yellow dye for wool.

A native of North America, jewelweed is wide-ranging on the continent. It grows from Alaska to Newfoundland, and from Florida westward to Mexico.

If you're looking for a plant to teach children about the wonder of flora, jewelweed is an excellent choice. Youngsters delight in the golden blossoms and the no-touch seedpods. You can also patiently teach them their first scientific name.

Caution

Only young cooked jewelweed shoots and leaves should be eaten. *Tom Brown's Field Guide to Wilderness Survival* warns that jewelweed has such a high mineral content, excess quantities could be harmful. In older plants, a bitter principle develops that can be purgative to the intestinal tract. Don't consume the mature foliage.

Physical Description

JEWELWEED: *Impatiens noli-tangere* (illustrated); *a*. Grows to 5 feet high; *b*. Flowers are bright yellow and slipper-shaped; *c*. Seed capsules explode at slightest touch; *d*. Leaves alternate on stem; have irregular coarse teeth; *e*. Stems give off a yellowish juice when broken. Plant is very succulent, wilts immediately upon picking. Jewelweed is not frost tolerant, except for the early sprouting seedlings.

MONKEY FLOWER (*Mimulus* species)

OTHER NAMES: yellow monkey flower, common monkey flower (*M. guttatus*); purple monkey flower, wild snapdragon (*M. Lewisii*)

Figwort Family (Scrophulariaceae)

Habitat and Range

Moist areas, stream edges, and wet slopes are favored habitats for monkey flowers.

M. guttatus, the yellow monkey flower, ranges from central Alaska and the southern Yukon to California.

The purple-flowered *M. Lewisii* ranges from extreme southeast Alaska to California.

Mimulus species increase dramatically in number in southern areas of the Pacific Northwest. California is reported to have seventy-seven species.

Monkey Flower: Smile-Stimulating Blossoms, Edible Greens

Meditating with monkey flowers is an ideal exercise for those who take life too seriously. To me, the bright blossoms with the apelike face look extraordinarily "happy," and happy is how I feel whenever I encounter *Mimulus* on a woodland walk.

Harvest Calendar

Spring (before flowering): greens. (Though this is the traditional time for harvest, botanist Boyd Shaffer reports enjoying fresh monkey flower salads at ten below zero! He found the leaves still lush and green under the winter ice.)

Summer: flowers.

Food Use

Monkey flower stems and leaves can be steamed as a potherb, simmered in soups, and added to vegetable pies and casseroles. The colorful blossoms, together with violet, columbine, and geranium flowers, are a striking addition in summer gelatin molds.

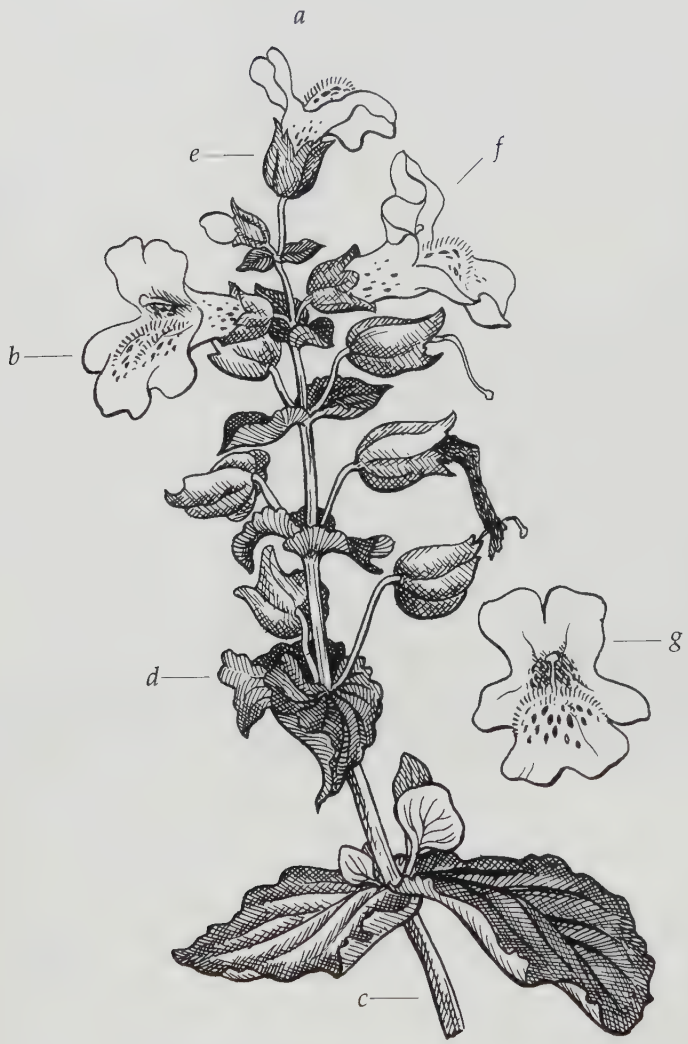
My favorite monkey flower use is as a trail nibble and salad green. I often add a little feta cheese and olives to my backpack, so that I can enjoy Greek Creek Salad on the trail.

The bright yellow flowers are distinctive and easy to recognize. (Norma W. Dudiak)

Greek Creek Salad

1 cup monkey flower leaves and flowers
1 cup river beauty leaves and flowers
1/4 cup saxifrage leaves
2 tablespoons sorrel
Olive oil
Vinegar
Salt and pepper
1/2 cup feta cheese
1/4 cup olives

Toss greens with oil until shiny. Sprinkle with vinegar and seasonings. Top salad with cheese and olives and serve. Serves 2.



Physical Description
MONKEY FLOWER: *Mimulus guttatus* (illustrated); *a*. Grows from 3 inches to 3 feet at maturity, depending on soil conditions; *b*. Flowers have red spots at the base of their hairy throats; *c*. The leaf stalks and stems are often tinged red; *d*. Leaves are arranged in pairs and have toothed edges; *e*. The bladderlike sepals are green and bell-shaped; *f*. The showy flowers are irregularly shaped and bright yellow in color; the lower floral lip is much longer than the upper; *g*. The flower, from the front, looks somewhat like a grinning monkey — hence the name "monkey flower."

Medicinal Use

Monkey flower leaves and stems can be macerated with a mortar and pestle (or simply chewed in the mouth to soften) and applied as a poultice for minor cuts, scratches, rope burns, and insect bites.

Cosmetic Use

Monkey flower greens are a suitable additive to skin salves and body lotions. Use alone or blended with chickweed and plantain.

Historical Use

Monkey flower greens were traditionally used as a food source by Indians and American settlers. In Britain, a musk-scented *Mimulus* species was a common houseplant; it perfumed cottages of commoners as well as castles of royalty. (*M. moschatus* is a musk-scented monkey flower that ranges in our area from British Columbia to California.)

Other

There are over 150 *Mimulus* species worldwide. The yellow monkey flower (*M. guttatus*) ranges as far south as Mexico. This pretty wildflower adapts well to the home garden and can be raised from seed or cuttings. Whether in the wild or household garden, do be certain to pause and admire this speckled (*guttatus*) mimic (*Mimulus*). You'll notice that the floral features do indeed mimic the features of a monkey and you're just apt to find the edges of your lips lifting playfully in response.

SAXIFRAGE (*Saxifraga* species)

OTHER NAMES: brook saxifrage, salad greens, deer tongue (*Saxifraga* species); spiked saxifrage (*S. spicata*); cordate-leaved saxifrage (*S. punctata*); wood saxifrage (*S. Mertensiana*)

Saxifrage Family (Saxifragaceae)

Habitat and Range

Dozens of saxifrage species and subspecies flourish on moist slopes and along creeks throughout our region. Species often used for food include *S. punctata* (northern Alaska and the Yukon to California), *S. spicata* (western and central Alaska), and *S. Mertensiana* (Kodiak Island and south-central Alaska to California). The genus as a whole is quite safe.

Saxifrage and Mist Maiden: Salad Greens

The saxifrage family is large and varied. Besides the saxifrage genus under discussion, the family includes alum root (*Heuchera glabra*), currants (*Ribes* species), lace flower (*Tiarella trifoliata*), and grass-of-parnassis (*Parnassia* species).

The saxifrage genus is extensive and challenging to the layperson. If you despair of differentiating the Pacific Northwest's several dozen species, be thankful that's all we have of the three hundred species worldwide! Fortunately, it's a safe group of plants and there are a few characteristics common to the genus. Plants are generally compact, tidy in appearance, perennial, and low growing. Flowers are generally borne on upright stems four to twenty inches high. Petal color is often white with bright orange, yellow, or reddish-purple spots. One constant is the presence of five petals, ten stamens, and the paired prominent follicles.

One plant that is distributed throughout our region and can be confused with saxifrage is mist maiden (*Romanzoffia* species). Leaves are quite similar in appearance to some species of saxifrage, but mist maiden fruits have a single round capsule rather than two follicles. Years ago, I mistakenly discovered the edibility of mist maidens, and today I intentionally harvest their leaves freely with those of saxifrage for use in salads.

Close-up of saxifrage flowers. Note the large red follicles in older flowers. (Jon R. Nickles)

Mist maiden (*Romanzoffia* species) has saxifragelike leaves and is often mistaken for saxifrage. It, too, is edible.

Harvest Calendar

Spring to summer: leaves (best before flowering).

Food Use

Add saxifrage to omelettes, stews, quiches, and casseroles. Don't forget to try cream of saxifrage soup; add a bit of sorrel for a lemony tang. Saxifrage leaves are also tasty stir-fried in butter, blended with orange juice and a bit of brown sugar, and used to baste poultry; add any leftovers to stuffing for your bird. Steam fresh leaves as a potherb, or use raw in salads.

As reported in *Kuuvanmiit Subsistence,* Kobuk River Eskimos favor saxifrage with seal oil and sugar. In *Nauriat Nigiñaqtuat,* Anore Jones mentions that Diomede Islanders, who came to Kotzebue, Alaska, each year to carve and trade ivory, would stuff seal pokes full of saxifrage leaves and store them in oil for the winter.

Medicinal Use

Saxifrage has been used in the treatment of scurvy. Fresh leaves are high in vitamins A and C.

Saxifrage's botanical name *Saxifraga* stems from the Latin *saxum* (rock) and *frangere* (break). Some botanists say this is due to the plant's habit of growing in fissures in rock; others say the name originates from saxifrage's historical use in treating stones in the urinary tract.

Physical Description

SPIKED SAXIFRAGE: *Saxifraga spicata; a.* To 7 inches high; *b.* Flowers have 5 white or yellow petals and 10 stamens; *c.* Leaves are kidney to oval-shaped; *d.* Margins of leaves have gland-tipped teeth.

CORDATE-LEAVED SAXIFRAGE: *Saxifraga punctata; e.* To 20 inches high; *f.* Flowers have 5 white or purple petals and 10 stamens; *g.* Flowers are in clusters at top of leafless stalk; *h.* Basal leaves are smooth, round to kidney-shaped with wide teeth; *i.* Saxifrage fruits typically have 2 follicles, though 3 or more are sometimes found. (NOTE: The fruit of mist maiden is a round capsule.)

In China, some species are employed in treatment of nausea and ear infections. Chinese also burn dry saxifrage leaves and use the smoke or steam to shrink swollen hemorrhoids. Medicinal use of our regional species has little documentation.

Other

Saxifrage was a favorite salad plant of the Pennsylvania Dutch. Woodcut illustrations of saxifrage have been found that are believed to be based on drawings more than sixteen centuries old.

Besides making a good salad plant, saxifrages is sometimes used as a garden ground cover. Some cespitose (carpet-forming) species, such as *S. bronchialis*, spread like grass; their beautiful spotted flowers are an extra bonus.

Spring Salad

1 cup saxifrage leaves
1/2 cup cleaned cooked fiddleheads
1/2 cup violet leaves
1/2 cup chickweed
1/4 cup dandelion leaves

Coarsely chop greens, and toss ingredients together well. Top with Mixed Green Dressing. Serves 2 to 3.

Mixed Green Dressing

1/2 cup oil
4 tablespoons vinegar
2 tablespoons soy sauce
1/4 cup sorrel
1/4 cup saxifrage
2 tablespoons dandelion leaves

Mix in blender on high speed.

Saxifrage leaves, picked before flowering, are a good salad green.

Both spring beauty and fairy spuds are characterized by long-stalked basal leaves and paired stem leaves.

Small five-petaled flowers are typical of Alaska's species.

SPRING BEAUTY (*Claytonia* species)

OTHER NAMES: Siberian spring beauty (*C. sibirica* also known as *Montia sibirica*); Bering Sea spring beauty, *keetuk* (*C. acutifolia*); fairy spuds, spud plant, potato plant, tuberous spring beauty (*C. tuberosa*); Scamman spring beauty (*C. Scammaniana*)

Purslane Family (Portulacaceae)

Habitat and Range

Habitat varies with species from stony mountain slopes to moist, shady places.

C. sibirica is common coastally from the Aleutian Islands and Alaska Peninsula to California.

Numerous *Claytonia* species, often of limited distribution, occur throughout the Pacific Northwest. Species include *C. acutifolia* (western Alaska), *C. tuberosa* (west-central and central Alaska and the central Yukon), *C. Scammaniana* (central Alaska), *C. Megarhiza* (British Columbia, Washington, Oregon), *C. umbellata* (southern Oregon to California), along with many others.

Claytonia: Dainty Greens and Flowers

The *Claytonia* genus honors John Clayton, a seventeenth-century botanist. The common name "spring beauty" describes the delightful wildflowers that bloom in spring in many locales. On northern mountain slopes, however, the dainty beauty often postpones blooming until summer's warmth coaxes it to unfold.

Harvest Calendar

Spring to summer: greens and flowers.
Fall and spring: taproots and corms.

Food Use

Tender *Claytonia* leaves are often added to wilderness salads, soups, and sandwiches. Greens are high in vitamins A and C. The flowers add a colorful edible garnish to many dishes. Spring Beauty Spread is an attractive hors d'oeuvre for parties.

The deep fleshy taproot of *C. acutifolia* and the corm of *C. tuberosa* have been used as potato

substitutes. They can be eaten raw, boiled, baked, or stir-fried. As *C. tuberosa*'s common name "fairy spuds" indicates, the corms are rated a delicacy. They are especially delicious wrapped in foil and baked on campfire coals and then topped with butter and herbs. However, the corms are small and a population of the beauties could easily be decimated by hungry foragers. Collect only in areas approved for harvesting, and from large stands, digging no more than one out of ten corms.

Roots of *C. acutifolia* are large and fleshy. They may be stored in a root cellar for winter use.

Other

Plant Lore of an Alaskan Island describes Siberian spring beauty as "rain flower." In Kodiak, locals warn that if you pick this flower it will rain.

There are some fifteen to twenty *Claytonia* species, most of which are native to western areas of North America. Spring beauty does well in rock gardens, especially when planted in moist soil in a shady location.

Spring Beauty Spread

8 ounces (1 large package) cream cheese
1/3 cup chopped spring beauty leaves and flowers
1/3 cup chopped mountain sorrel or wild chives
Whole spring beauty flowers
Assorted crackers

Blend cream cheese, spring beauty, and sorrel. Spread on crackers. Top with whole flowers. Serve as an appetizer.

Physical Description

BERING SEA SPRING BEAUTY: *Claytonia acutifolia*; *a*. White or pink 5-petaled flowers; yellowish at base; *b*. Stem leaves are opposite; *c*. Basal leaves are long and narrow; *d*. Taproot is thick and fleshy.

SCAMMAN SPRING BEAUTY: *Claytonia Scammaniana*; *e*. Deep magenta blossoms. Flowers number 1 to 2 (rarely 3) per stem. Flowers are large in relation to plant; *f*. One pair of opposite leaves per stem.

SPRING BEAUTY: *Claytonia sibirica*; *g*. Grows to 15 inches; *h*. Flowers have 5 pink or white petals. Many flowers per plant.

FAIRY SPUDS: *Claytonia tuberosa*; *i*. Few-flowered. Petals white with yellowish base; *j*. One pair of opposite leaves on stem; *k*. Basal leaves may be lacking. When present, they are on long stalks (petioles); *l*. Small, potatolike corm.

Serviceberry flowers are showy; the shrub is highly suited as an ornamental. (Jon R. Nickles)

Gravel Bars, Dry Slopes, Tundra, and Dry Rocky Places

The earth laughs in flowers.

——RALPH WALDO EMERSON

Though the bony, gravel bar of a river may appear an unlikely garden, in summer it may blaze with flowers. Thick stems, long rootstalks, and waxy or hairy leaves that lessen evaporation are clever adaptations that help plants thrive in such inhospitable habitats.

In southern desert country, plants often develop water-storing capability; cactus is a champion survivor. In dry tundra regions of the Arctic, where rainfall may actually match that of deserts, plants adapt to climatic conditions through mechanisms that range from succulence and dwarfism to the noteworthy spring "woolliness" of woolly lousewort.

Plants of dry slopes vary from wormwood and juniper to serviceberry and soapberry. Tundra is typical habitat for pink plume and lousewort. Dry rocky places commonly feature roseroot, mountain sorrel, and Indian potato.

Indian potato is very similar to bear root in growth form and habitat. *H. alpinum*, shown, has flower clusters that are tapered at the top; the toxic *H. mackenzii* has flower clusters that are broader and squarer at the top. (Boyd Shaffer)

INDIAN POTATO (*Hedysarum alpinum, H. hedysaroides*)
BEAR ROOT (*H. mackenzii*)

OTHER NAMES: Eskimo potato, *masru*, Alaska carrot, licorice root (*H. alpinum, H. hedysaroides*); wild sweetpea (*H. mackenzii*)

Pea Family (Leguminosae)

Habitat and Range

Indian potato and bear root share similar habitats, namely gravel river bars, roadsides, rocky hillsides, and meadows.

H. hedysaroides and *H. alpinum* are noted as edibles in the *Hedysarum* genus. Collectively they range from northern Alaska and the Yukon to British Columbia. Their range frequently overlaps with *H. mackenzii*, a species reported to be toxic. Species of unknown edibility, such as *H. boreale* (the Yukon to Oregon) and *H. sulphurescens* (British Columbia to Washington) also occur.

***Hedysarum:* Genus to Be-A-Ware**

Unlike many genera where some species are more tasty than others but all are harmless, the *Hedysarums* have distinct differences in safety. To harvest, you must be aware, noting subtle variations in leaf and flower structure between species. Foragers careless in identification are risking digestive disturbances.

Though *H. mackenzii* isn't apt to be lethal, it is unsuited for human consumption. Athabascans refer to *mackenzii* as "brown bear food." Alaska's other *Hedysarum* species (*alpinum* and *hedysaroides*), however, are highly regarded for human use. Both *H. alpinum* and *H. hedysaroides* have smooth leaves with obvious veins on the underside of their leaves. *H. hedysaroides* has a shorter and darker colored flower cluster than *alpinum*. The top of the clusters in both are tapered, and narrower in appearance than *H. mackenzii*. Pods are smooth and net-veined.

Harvest Calendar

Early spring or fall after frost: roots. (NOTE: The time of harvest creates a problem for foragers. The plants are most easily and positively identified during summer, precisely when the

roots are dry and stringy. Foragers should mark a patch carefully, taking note as to whether any toxic bear root is present. In fall, when the foliage has died back and the roots are sweet, the forager can return and safely harvest. Do remember to gather only one or two out of every ten roots in a dense patch so as not to disrupt the plant population.)

Natives, who rely heavily on this food source, can identify *Hedysarum* species simply by the appearance of the root. The "bear food" tends to have shorter, less branched taproots. Those unfamiliar with the plant, however, should rely on a complete plant description or the wisdom of an experienced local gatherer.

Food Use

An Air Force publication, *Emergency Food Value of Alaska's Wild Plants*, describes Indian potato as "... possibly the best wild plant food source in Alaska. Where found it can usually be gathered in very large amounts and it is highly nutritious."

Like garden parsnips, the roots of Indian potato are sweetened by frost. The plump fall (or spring) roots can be washed and eaten raw like carrots, grated into coleslaw, sliced and stir-fried, steamed as a dinner vegetable, simmered in stews, or added to boiled dinners. Try Tatercakes when camping; serve them as a breakfast pancake, or as a supper potato substitute.

Dena'ina Athabascans feed the softened root to infants who lack mother's milk. The food

Physical Description

BEAR ROOT: *Hedysarum mackenzii; a.* Grows to 2 1/2 feet; *b.* Showy reddish-purple flowers are arranged in clusters (racemes); *c.* Pods (loments) are hairy, cross-veined, and have 3 to 8 joints; *d.* Undersides of leaves are whitish and felty. Veins are hidden. Roots are inedible and can cause severe digestive upset. This species is regarded as poisonous.

INDIAN POTATO: *Hedysarum alpinum; e.* Grows to 2 1/2 feet; *f.* Flower clusters are tapered and narrow at the top; *g.* Pods are smooth and net-veined. *H. alpinum* pods have 2 to 5 joints. *H. hedysaroides* pods have 1 to 3 joints; *h.* Leaves are smooth; veins on underside are obvious. Roots are edible.

Tatercakes

2 cups grated (or diced) Indian potato roots (wash roots well before grating)
1/4 cup chopped chives
2 eggs, beaten
2 tablespoons flour
Dash salt (or ground seaweed)
Oil for frying
Butter

Mix all ingredients, except oil. Place 1/4 cup mixture on lightly oiled griddle or frying pan. Flatten to pancake shape. Brown well on both sides. Top with butter and serve. Serves 2.

Roots of Indian potato are widely gathered by Alaskan natives.

is an important staple, which is stored in quantity in underground food caches. The Dena'ina refer to *H. alpinum* as *k'tl'ila* meaning rope, an apt description of the root that grows to two feet long. *H. mackenzii* is *ggagga k'tl'ila*, which translates as good food for bears.

Interior Athabascans gather Indian potato in fall and store the roots (mixed with fish oil and *Rubus chamaemorus* berries) in cellars for winter use. Flora Kokrine, an Athabascan born in Tanana, Alaska, favors roots fried in oil. Elder Howard Luke of Nenana says he adds the roots to moose soup.

Kobuk River Eskimos crush *H. alpinum* root (called *masru*) and use as butter. Roots are often taken from mouse holes and replaced with fish or other food. According to Inupiat teachings, *masru* should always be eaten with oil. Eating the root plain can cause constipation.

Other

The botanical name *Hedysarum* is from the Greek *hedys* (sweet) and *aroma* (smell). The attractive flowers do have a sweetish fragrance and are sometimes grown as ornamentals in sunny, well-drained soil. Planting a specimen in your garden would be an ideal way to study the plant in all its stages of growth.

Caution

Harvest *Hedysarums* only if you can positively identify the species you are gathering. The University of Alaska Cooperative Extension booklet, *Wild Edible and Poisonous Plants of Alaska*, reports that during the Arctic exploration of Sir John Richardson all the men who mistook bear root for Indian potato became ill.

JUNIPER (*Juniperus* species)

OTHER NAMES: common juniper, low juniper, prickly juniper (*J. communis*); creeping juniper, creeping savin (*J. horizontalis*); California juniper (*J. californica*); western juniper (*J. occidentalis*); Rocky Mountain juniper (*J. scopulorum*)

Cypress Family (Cupressaceae)

Close-up of common juniper showing its needlelike leaves and mature female fruits, colloquially called "juniper berries." (Norma W. Dudiak)

Habitat and Range

Dry, sunny slopes and sandy areas are common habitats for juniper.

Common juniper (*J. communis*) is indeed the most common *Juniperus* species in the Pacific Northwest. It ranges from northern Alaska and the Yukon to California.

Other Pacific Northwest species with similar use include the following:

Creeping juniper (*J. horizontalis*), characterized by smooth scalelike leaves that press closely to the stem, grows from south-central Alaska and the central Yukon to British Columbia.

California juniper (*J. californica*), a species of southwest Oregon and California, has scalelike leaves with a white surface arranged in whorls of 3.

Western juniper (*J. occidentalis*) has greenish scalelike leaves in whorls of 3; it grows from Washington to California.

Rocky Mountain juniper (*J. scopulorum*) ranges from southern British Columbia to eastern Oregon; it has alternating pairs of scalelike leaves.

Juniper: Tangy Spice and Potent Medicine

If cattails are the "supermarket of the swamp," then juniper must be the "shopping mall of the mountains." This shrubby evergreen, which is one of the most widely distributed woody plants in the world, offers countless products for the enterprising forager. With the berries and twigs you can brew tea, season game, smoke fish, repel moths, soothe rheumatic pains, and kill infectious germs!

Harvest Calendar

Year-round: Since juniper fruits take two to three years to mature, the plant can be harvested at any time. Only blue fruits should be collected for food and medicines. Fruits that are not fully mature are harvested for brewing alcoholic drinks as they are higher in essential oils.

Food Use

Juniper's primary food use is as a seasoning; the resinous fruits add spicy flavor to sauerkraut and potato salads. Juniper Marinade is excellent for moose, venison, rabbit, and poultry; vegetarians might like to try it with tempeh or tofu.

A half-dozen juniper berries per half-pound meat is the recommended guideline for flavoring meat. Try placing roasts on a bed of juniper branches for the last ten minutes of cooking for a flavorful accent; serve on the juniper bed for a decorative touch. When smoking fish and meats, add a few juniper branches to your alder chips.

In Scandinavia, deseeded juniper berries are made into jam and spread on bread. In Britain and France, the berries are a pepper

Juniper Marinade

3 tablespoons juniper berries
3/4 cup oil
4 tablespoons soy sauce
1/4 cup vinegar
1/4 cup cooking wine

Crush juniper berries, then combine all ingredients in a bowl and mix well. Soak meat chunks in the mixture for 24 hours, turning every so often to coat evenly. Roast the meat on a campfire (or in an oven), basting frequently with the marinade.

Juniper is a creeping shrub to small tree; growth form varies with climate and conditions. (Janet R. Klein)

substitute and a base for making beer. In the United States, and elsewhere, juniper berries are used to give gin its characteristic flavor; the immature female fruits, by the way, are highest in the desired oils and best for flavoring spirits.

A pleasant nonalcoholic beverage is made by steeping *berryless* juniper boughs for five to ten minutes. The berries themselves can also be used, but the fruits are especially potent and should not be taken on a regular basis. When serving juniper tea as a nonmedicinal beverage, prepare in an *uncovered* teapot to allow the potent volatile oils to escape.

Medicinal Use

Juniper is frequently used by herbalists for urinary tract and bladder infections and inflammations. Michael Moore, in *Medicinal Plants of the Mountain West,* especially recommends it for cystitis and urethritis. He suggests ". . . a teaspoon of crushed berries or a rounded teaspoon of the leaves, steeped in a covered cup of water for fifteen minutes and drunk, one to three cups a day." To increase effectiveness of the brew, juniper is often blended with kinnikinnick (*Arctostaphylos uva-ursi*) and cleavers (*Galium aparine*).

Since juniper's essential oils can be irritating to the kidneys (see Caution, following), the herb is commonly buffered with herbs soothing and softening to body tissues (demulcents and emollients), such as comfrey, mallow, mullein, and slippery elm. Demulcent Alaskan herbs include Iceland moss, common plantain, and coltsfoot. Juniper blends are used for a variety of complaints, ranging from fluid retention and gas to poor appetite and stomach cramps.

Juniper oil extracts (obtained through distillation) are used as an external application for bone-joint difficulties, but herbalist John Lust warns ". . . the pure oil is irritating and in large quantities, can cause inflammation and blisters." A milder home product can be made by soaking juniper berries in olive oil; use as a massage oil for strained muscles or aching joints. To obtain juniper liniment, soak the fruits in everclear or witch hazel for two weeks; then strain the fluids and use this to rub down a horse's legs after a strenuous workout, or a human's back after a hard day.

Nibbling a few juniper berries or sipping juniper berry tea one hour before meals is often recommended to those troubled by indigestion. This is said to stimulate the secretion of hydrochloric acid and pepsin, thus facilitating digestion.

Dena'ina Athabascans drink juniper berry tea for sore throat, colds, tuberculosis, and difficulty in urination. Inupiat boil juniper berries and twigs to make a tea for respiratory problems. In the Kotzebue area, adds Anore Jones, "some people toast the leaves on the back of the stove in a room where there is a sick person so the rest of the family won't get sick." To prevent or cure a cold, slowly dissolving one juniper berry in your mouth daily is also recommended.

Cosmetic Use

A decoction of juniper branches is an anti-dandruff hair rinse. The same fluid can be added to bath water to ease away aches and pains.

Historical Use

Juniper was an ingredient in sixteenth century herbal blends (along with wormwood, elder, and roses) to fumigate rooms. This evergreen does, in fact, give off a disinfectant gas when it is burnt that effectively destroys infectious fungi. During epidemics, it was often burned in hospital rooms. The standard method involves igniting a branch, blowing out the fire, and waving the smoldering juniper in the room. If you have a sauna, you can place twigs and berries on the hot rocks and sprinkle them with water; the juniper steam serves the same purpose. It certainly adds a wonderful fragrance to the air.

For many native people throughout history, juniper has been an important plant. Berries were ground and cooked as mush and hotcakes. Plants were carried in pouches as protection against evil influences. When a person died, the bedding and belongings of the deceased were washed in a juniper decoction.

Physical Description

JUNIPER: *Juniperus communis* (illustrated); *a*. Matlike shrub to 30-foot tree. Northern specimens often prostrate; *b*. Leaves of common juniper are long, sharp-pointed, and needlelike, with a characteristic channel of white; *c*. Male and female flowers are on separate plants. Flowers are inconspicuous and yellow-green in color. Male flowers form yellow cones. Female flowers develop into the "juniper berries" used for spices and teas; *d*. Female fruit is smaller than a pea, pale green when immature. Takes 2 to 3 years for mature fruits, which are blue-black with whitish bloom and have a distinctive ginlike flavor; *e*. Stem bark is scaly; varies in color from gray to reddish brown.

Other

Juniper wood can be shredded and placed in chests and drawers to repel moths. In areas where juniper grows tree-sized, the wood is used in the manufacture of pencils and fence posts.

When camping, you can use juniper bark as tinder, juniper boughs as a camping mat, and ashes of burnt juniper twigs as a powder for brushing your teeth. If you're a smoker out of tobacco, try a pipeful of dry juniper berries for a flavorful smoke.

On the homesite, juniper is an attractive ornamental that favors dry sunny soil. If you are suffering the cabin fever blues from an overdose of winter white, you can brighten your spirits and surroundings with a vaseful of the cheery green branches. If you're still despondent, burn some branches; the fragrant smoke is believed to dispel melancholy as well as germs!

Caution

Juniper should not be taken internally by pregnant women or by individuals with kidney problems. Juniper contains a potent volatile essential oil, oil of sabinal. In excess, juniper can cause severe renal damage and convulsions. Before taking for a medical condition, it is best to consult with a physician.

Used in moderation (as all seasonings should be used), the herb should provide no problems for those in normal health.

KINNIKINNICK (*Arctostaphylos uva-ursi*)
BEARBERRY (*A. rubra, A. alpina*)

OTHER NAMES: uva-ursi, chipmunk's apples, mealberry, *tinnick*, arbutus (*A. uva-ursi*); red bear's grape (*A. rubra*); black bear's grapes, alpine bear grapes (*A. alpina*)

Heath Family (Ericaceae)

Habitat and Range

Arctostaphylos species favor dry, sandy and rocky slopes, and heaths.

Kinnikinnick (*A. uva-ursi*) ranges from northeast Alaska and the northern Yukon to California.

Red bearberry (*A. rubra*) is distributed from northern Alaska and the Yukon to British Columbia.

Black bearberry (*A. alpina*) inhabits Alaska and the Yukon.

Numerous other species are distributed in our region, especially in California. Manzanita, *A. columbiana*, (British Columbia to California) is a showy shrub to small tree popular with ornamental gardeners.

Kinnikinnick and Bearberries: Herbs for Men, Women, and Bears

Kinnikinnick's botanical name, *Arctostaphylos*, stems from *arctos* (bear) and *staphyle* (bunch of grapes). Bears are fond of these fruits, a fact that is emphasized again by the specific name *uva-ursi* (meaning grape of the bear). Other species aren't quite so redundant — *A. rubra* means red bear grapes and *A. alpinus* translates as alpine or mountain bear grapes. Kinnikinnick and bearberry fruits are relished by bears as well as spruce hens; mountain sheep and moose often browse the plants.

Harvest Calendar

Spring to fall: leaves of *uva-ursi*. (NOTE: Since these are evergreen, they also can be harvested in winter for smoking tobacco.)

Late summer: ripe fruits.

Food Use

Kinnikinnick and bearberry fruits aren't very palatable or popular raw. Cooked fruits,

Kinnikinnick (*A. uva-ursi*) has trailing matted stems, evergreen leaves, and pink, urn-shaped flowers.

Bearberries have deciduous leaves with a wrinkled appearance. Fruits of *A. rubra* are red.

Mom's Herbal Bath Blend

Based on a recipe from *Better Home Birth* by Yvonne Watkins

1 ounce kinnikinnick leaves
1 ounce comfrey
1 ounce shepherd's purse
1 whole bulb fresh garlic
1/2 cup sea salt
2 gallons water

Simmer herbs in 1 gallon water for 30 minutes. Strain, reserving fluids. Add remaining gallon water to herbs and simmer for 30 minutes. Strain, combining fluids. Add 2 gallons strained fluids to bath water.

NOTE: Watkins recommends this bath be taken shortly after childbirth for at least 30 minutes; the water should be about hip level, and comfortably warm (not overly hot). She directs the new mother to "lie back, spread your legs and swoosh the healing waters up inside the birth canal." The baby should be included in the bath; Watkins says this "will start the healing process of the cord stump, and it may drop off as early as 3 days."

however, do yield a more acceptable dish. Try simmering fruits in water until soft, grinding them in a food mill, sweetening the pulp to taste, and serving as a mock cranberry sauce. Simmer with honey, cinnamon, and cloves for mock apple sauce.

For a tangy wilderness "lemonade," simmer two cups fruits in two cups water with one-half cup honey for thirty minutes. Let the mixture sit one hour. Then strain, chill, and enjoy.

Anore Jones, writing in *The Kotzebue Basin*, says kinnikinnick fruits are stored in oil by Kotzebue locals. When the seeds are soft and the fruits are juicy and sweet, they are ready for consumption.

Medicinal Use

A. uva-ursi is the species used for medicinal purposes; it contains ten percent arbutin and substantial ericolin, substances that hydrolize in stomach fluids to form the urinary antiseptics, hydroquinolone and methylhydroquinone. The tea is traditionally used in treatment of kidney and bladder infections, kidney stones, bed-wetting, and urinary tract disorders. In *Hygieia*, Parvati recommends boiling a heaping teaspoon herb in two cups water for thirty minutes and drinking one-half cup every four hours ". . . for excessive menstruation, gonorrhea, ulceration of the cervix, and other female troubles." (See Caution, following.)

For vaginal inflammation, women use kinnikinnick tea as a douche. Michael Moore, in *Medicinal Plants of the Mountain West*, suggests mothers boil one-quarter cup *uva-ursi* leaves in a gallon of water for twenty minutes and use this mixture in sitz baths after childbirth to reduce inflammation and prevent infection. The bath should be taken every morning for three to four days.

Mom's Herbal Bath Blend is also very appropriate for new mothers.

Other external applications for kinnikinnick decoctions are as wash for skin irritation and rashes. Add leaves to herbal baths for suppurating skin conditions.

Grease-soaked *Arctostaphylos* fruits are used as a laxative by Dena'ina Athabascans. Alaskan homesteaders used to soak berry leaves in brandy and then brew into a tea for minor health complaints.

Cosmetic Use

Cold *A. uva-ursi* tea makes a good splash for closing the pores after a facial steam. Being antiseptic, the herb is well suited for antibacterial liniments.

Historical Use

The Klallam Indian name, *kinnikinnick*, translates as "smoking mixture"; this mixture was smoked during ceremonies by various native peoples. Canadian Indians dubbed the plant *sagack-homi*; the French, reports Haskin in *Wild Flowers of the Pacific Coast*, punned the name sac-a-commis as Hudson's Bay clerks (*commis*) liked to carry pouches (*sac*) of this herb for smoking. Fur traders commonly blended kinnikinnick with tobacco to extend supplies.

Terry Domico, in *Wild Harvest*, says that there are many stories about drunken sprees produced by inhaling the smoke of kinni-

kinnick blended with bunchberry and salal leaves. After a personal test, Domico reported that "smoking dried kinnikinnick leaves had no effect on me, but it did smell like the downwind side of a smoky campfire."

Other

Hygieia states that occultists place bowls of bearberry leaves in rooms to stimulate astral projection and psychic opening. Those seeking a more earthy application may wish to experiment with *Arctostaphylos* plants as natural dyes; color varies from camel to gray or blue-green depending on plant parts, mordant, and species used.

The herbs also make attractive garden ornamentals. Leaves of *A. rubra* and *alpina* are radiant in fall; in miniature, they offer autumn foliage as stunning as any New England hardwood forest. Kinnikinnick, by contrast, is quite drab; it remains green all year, a fact appreciated more in the white of winter than in the color-competitiveness of fall. It, too, is cultivated as an ornamental, and often planted on sandy slopes, highway cuts, and barren soils to check erosion. Transplant dormant roots in spring, or sink a flowerpot filled with sandy soil near an established patch. After the herb roots itself, cut it free and transplant to the desired area.

Caution

A. Uva-ursi is NOT recommended for internal use by pregnant women; herbalist Michael Moore warns that large quantities could decrease circulation to the fetus.

Herbal Medications says that *A. uva-ursi* is "... relatively safe, and no symptoms are expected in quantities generally available." Taken in large or frequent quantities, however, it can cause gastrointestinal upset, nausea, and central nervous system depression. For chronic urinary and kidney problems, *A. uva-ursi* is safest blended with soothing, demulcent herbs such as Iceland moss and comfrey.

Be aware that internal consumption of *A. uva-ursi* tea often results in the urine becoming alkaline and bright green; the urinary antiseptic hydroquinolone is the cause of this harmless reaction.

Physical Description

KINNIKINNICK: *Arctostaphylos uva-ursi; a.* Low, trailing, matlike shrub with long flexible branches; *b.* Fruits are dull red, dry, and mealy; *c.* Flowers are pinkish, urn-shaped with 10 stamens; *d.* Leaves are leathery, dark green and slightly hairy on top, pale below; *e.* Branches 8 to 20 inches long.

BLACK BEARBERRY: *Arctostaphylos alpina; f.* Leaves are fringed with regular hairs; *g.* Fruits are black.

RED BEARBERRY: *Arctostaphylos rubra; h.* Both black and red bearberry have white to greenish-white flowers; *i.* Leaves have a wrinkled appearance. Growth to 6 inches high is common to *A. alpina and A. rubra; j. A. rubra* has red fruits.

Reindeer moss is actually a lichen; its common name stems from its hollow branches that resemble reindeer antlers.

Iceland moss has branches that are flattened rather than hollow.

LICHENS:
REINDEER MOSS (*Cladina rangiferina,* formerly *Cladonia rangiferina)*
ICELAND MOSS *(Cetraria islandica)*

OTHER NAMES: caribou moss, reindeer lichen *(Cladina rangiferina)*

Parmeliaceae Family

Habitat and Range

Reindeer and Iceland moss flourish in open areas, bogs, tundra, and forests from Alaska to northern California. They are most common in the colder sections of our region.

Reindeer and Iceland Moss: Foods for Survival

Unless you're a caribou, *Cladina* and *Cetraria* probably won't be your favorite wild edibles. They are, however, good to be acquainted with as nourishment during emergency situations.

Despite their common names, reindeer and Iceland moss are lichens rather than mosses. A lichen is not one, but two separate organisms, an alga and a fungus, that live together as a single unit.

The alga, due to its chlorophyll, is able to manufacture food, while the network of white fungal threads (mycelia) provides moisture, protecting the alga from desiccation. It was an understanding of the nature of lichens that sparked birth of the term "symbiosis," a word that describes the partnership of dissimilar organisms.

Lichen's gray-green color, says Nina Marshall in *Mosses and Lichens,* ". . . is then due to the fact that a bright-green plant is covered over by a translucent white plant, and the brighter green of the wet lichen is due to the fact that the wet strands of the fungus are rendered transparent by the absorbed moisture, and permit the colour of the imbedded green to be seen."

In caribou country, the abundant reindeer moss provides food for the ever-restless herds. For humans stranded in an inhospitable tundra, the hardy lichens can well provide sustenance and survival.

Harvest Calendar

All year, for emergency use.
Spring and autumn, for medicinal use.

Food Use

Lichens are not a pop-in-your-mouth or toss-in-a-salad edible. They must be leached in a clean stream overnight, or boiled in several changes of water (preferably with baking soda added each time) to remove the acids that can cause intestinal irritation.

Lichens, after leaching or parboiling, can be added to soups and stews as a thickener, boiled with fruits into a jelly, dried as a flour extender or substitute, simmered as a vegetable with wild game or fish, or cooked into a pudding or custard. In Iceland and Scandinavia, lichens are commercially harvested for a lichen powder that forms the basis of soups and desserts.

Kobuk River Eskimos use reindeer lichen as survival food for both humans and dogs. Some Eskimos eat the partially digested lichen contents of stomach of slain caribou. Inland Dena'ina Athabascans boil or soak *Cladina* until soft and then eat it plain or with berries, fish eggs, or oil.

Reindeer moss, which I've sampled, lacks a strong flavor; the leached, dried product reminds me of the taste of crustless white bread. In Survival Stew, the flavors of whatever meat and vegetables you've selected will predominate.

Medicinal Use

Smith, in "Arctic Pharmacognosia," writes that an Aleut informant reported using reindeer moss tea for chest pains, and that native hunters ". . . who are climbing hills eat it in order to maintain their wind." Dena'ina Athabascans, says Kari, boil and eat *Cladina* ". . . to stop diarrhea. They also drink the juice that is left."

Since the eighteenth century, herbalists have prescribed Iceland moss in the treatment of chest ailments, digestive upset, and tuberculosis. *The Complete Book of Health Plants* specifies that *Cetraria* ". . . contains the carbohydrate complexes lichenin and isolichenin, and the bitter principle cetrarin. For bronchial catarrh, an infusion of the lichen can be used, or lozenges prepared by combining the lichen mucilage with gum arabic, sugar and flavouring."

Today, science has verified that many lichen species contain acids that exhibit significant antibiotic activity. According to Christopher Hobbs in *Herbal Antibiotic: Usnea,* World War II researchers discovered that more than half of the lichen species tested contained compounds effective ". . . against gram positive bacteria, such as Streptococcus, Staphyloccus and Pneumonococcus."

Historical Use

The Biblical manna that rained from the heavens is believed to have been a crustaceous lichen, *Lecanora esculenta.* These lichens are commonly carried great distances by the wind and are still a popular food in the Eastern Hemisphere.

In Egyptian times, reports *Plantcraft,* lichens were blended with spices and sawdust and used to perfume and mummify corpses. Some species (such as *Evernia prunastri*) are still being used today in perfumery, but to scent the living.

Other

Dioscorides, in A.D. 69, named "lichen" after the Greek for "leprous," due to the supposed resemblance between the plants and the skin of those with leprosy. Botanically,

Survival Stew

Fresh, cleaned fish, rabbit, or duck
Reindeer moss (leached in stream overnight)
Water
Available edible wild greens

Combine cleaned fish (or meat) and lichens, and simmer in water until fish is tender. Remove bones. Add vegetables. Cook 10 to 15 minutes more.

Adjust amounts according to available materials and number of servings desired.

lichens lack true leaves and stems; instead of root stems, they merely attach to a suitable surface by fiberlike rhizoids. Their lack of water conduction organs gives lichens a peculiar manner of absorbing nutrients — tissues act like a sponge, absorbing fluids over their whole surface. This feature makes lichens especially susceptible to pollutants in the atmosphere. In Switzerland, the presence or absence of specific lichen species in a given locality is used as an indicator of the level of air pollution.

Though lichens sometimes succumb to pollutants, they brave the harshest climates of the planet. In *Forests of Lilliput*, Bland describes how "in an experiment on temperature adaptation in lichens, plants were dried in air and then in a desiccator. They were exposed to a temperature of 268° Centigrade for one to seven hours. On return to room temperature, the plants resumed normal metabolism."

Lichen extracts are employed as litmus. An African lichen, *Rocella*, is well known for its ability to turn red in acid solutions and blue in alkaline.

Other Pacific Northwest lichens of special interest include the following:

British soldiers *(Cladonia bellidiflora)* are small branched lichens. Their fruiting bodies are scarlet knobs reminiscent of "Redcoats."

Dog tooth lichen *(Peltigera* species) is a leafy lichen common on spruce. Some species are bright green when wet, and dull gray when dry. The common name alludes to the fact that *Peltigera canina* was once used in the treatment of rabies. A more reliable use is for dyeing yarn and cloth; I find this lichen yields pleasant

Physical Description

REINDEER MOSS: *Cladina rangiferina; a.* 1 to 4 inches high; *b.* Body of lichen (thallus) forms hollow branches. Branches are extremely pale greenish-gray, with a branching pattern mostly in fours. Very brittle when dry, resilient wet; *c.* Reindeer moss colonies are often extensive.

ICELAND MOSS: *Cetraria islandica; d.* 1/2 to 2 inches high; *e.* Body of lichen (thallus) is light brown-gray with erect, flattish branches and curled edges.

brown pigments. Boyd Shaffer of Soldotna, Alaska, adds that *Peltigera* is one of the best lichens for emergency food.

Old man's beard (*Usnea* species) is a gray-green, beardlike lichen often found on spruce. All *Usnea* species yield usnic acid, an effective antibiotic. *Herbal Antibiotic: Usnea* recommends usnea tincture for acute bacterial infections, strep throat, pneumonia, and bronchial problems.

Pixie cups *(Cladonia pyxidata)* are greenish lichens with cuplike formations; young children delight in hearing that these diminutive "goblets" hold water for pixies and fairies. Mrs. Grieve, in *A Modern Herbal*, describes this species as "... expectorant, a valuable medicine in whooping cough." For a children's cough syrup, she suggests a dosage of two ounces pixie cup decocted in water and blended with honey.

Individuals seeking hardy, easy-to-raise houseplants would do well to consider lichens; they flourish in terrariums and bottle gardens and come in a fascinating array of shapes, colors, and textures.

Caution

Lichens must be leached or parboiled in changes of water before consumption to remove the irritating acids.

Since lichens absorb contaminants from the atmosphere, they could be dangerous to consume in a polluted region. It has been found that radioactive materials from nuclear atmospheric testing concentrate in lichen tissues. Biologist Jane Middleton reports that "in the 1960s, natives of Anaktuvuk Pass (in the Brooks Range) had a high level of Strontium 90 in their bodies. It came from eating caribou that had been feeding on lichens which had absorbed the radioactive substance after some nuclear testing!"

Pink plumes have showy pink flower spikes. (Boyd Shaffer)

Lower flowers of alpine bistort are replaced by bulblets that fall to earth and grow new plants.

PINK PLUMES *(Polygonum bistorta)*
ALPINE BISTORT *(P. viviparum)*
ALASKAN RHUBARB *(P. alaskanum)*

OTHER NAMES: bistort, mountain meadow bistort, snake-weed, plume flower (*P. bistorta* also known as *P. bistortoides*); smartweed (*P. amphibium*); knotweed (*P. aviculare*); wild rhubarb (*P. alaskanum*)

Buckwheat Family (Polygonaceae)

Habitat and Range

Habitat varies with species, from dry meadows and riverbanks to spruce woods and tundra bogs.

Pink plumes *(P. bistorta)* ranges from northern Alaska and the Yukon to California.

Alpine bistort *(P. viviparum)* grows from Alaska and the Yukon to Oregon.

Alaskan rhubarb *(P. alaskanum)* is common in western and interior Alaska and the northern and central Yukon.

There are over a dozen *Polygonum* species distributed throughout the Pacific Northwest. All are reported safe to eat, though palatability varies.

Bistort and Alaskan Rhubarb: Pie Ingredients and Medicines

The botanical name, *Polygonum*, translates as "many joints or knees" and describes the angular stems of many plants of this genus. Worldwide, there are some 150 species; foragers will find the following three species of special interest.

P. bistorta, commonly called pink plumes or mountain meadow bistort, has a showy pink flower spike and a twice *(bis)* twisted *(torta)* or convoluted rootstock. *P. viviparum*, dubbed alpine bistort, has a similar (and equally edible) rhizome. It can be easily distinguished from pink plumes by its lower flowers that form bulblets. These drop to earth and bear new plants; the specific name *viviparum*, meaning "to bring forth live young," describes this trait.

The wild *P. alaskanum*, common in the Interior of Alaska and the Yukon, is often used as a domestic rhubarb substitute.

Harvest Calendar

Spring and fall: rootstock of pink plumes and alpine bistort.

Spring to summer: leaves and young stems of all species.

Late summer: seeds of all species.

Food Use

Polygonum greens are added to salads and soups, and steamed as a potherb. Seeds are nutty and flavored like buckwheat; sprinkle them on bread and biscuit dough in place of poppy seeds. Add seeds to pancake mix. When especially abundant, they can be dried and ground as a flour extender for making bannock and other baked goods.

Rhizomes of pink plumes and alpine bistort can be roasted on campfire coals. Due to their small size, you may prefer to add a few sliced rootstocks to stir-fries (for crisp texture and an almondlike flavor) rather than relying on them as a potato substitute. They are also good in soups and stews.

Young wild rhubarb stems, with the fibrous outer peelings discarded, substitute for domestic rhubarb in pies and sauces; for a zesty green preserve, add pectin. Thick puddings can be made by simmering chopped greens and stems with flour, water, and sweetener. I like blending available *Polygonum* greens in casseroles.

In *Kuuvanmiit Subsistence* it is reported that Kobuk River Eskimos eat wild rhubarb greens raw with fish oil, as well as boil them with fish or meat. Anore Jones, writing in *The Kotzebue Basin*, adds that leaves can be cooked with dry apples and raisins, or boiled like dock.

Medicinal Use

Mrs. Grieve, in *A Modern Herbal*, describes *Polygonum bistorta* rootstock as "one of the strongest astringent medicines in the vegetable kingdom." The root is highly styptic and may be used for internal or external bleeding. Grieve adds that the root has been "proven of excellence" in diarrhea, dysentery, hemorrhage, hemorrhoids, and nosebleeds.

For stomach ulcers, the rootstock is administered internally as tea or tincture. Bistort salve is applied externally for bleeding

Wild rhubarb is a showy northern species well suited as a garden ornamental.

Polygonum Pie

2 eggs, beaten
6 tablespoons flour
2 cups chopped *Polygonum* greens
2 cups cottage cheese
1/2 cup grated cheddar cheese
1 teaspoon soy sauce
2 sliced rootstocks of pink plumes or alpine bistort

Grease pie pan, quiche dish, or 8-by-12-inch baking dish. Blend all ingredients (except sliced rootstocks). Spread in dish. Garnish with sliced rootstocks, if desired. Bake at 350°F for 30 minutes. Cut into wedges or squares and serve as a main dish with soup or salad and bread. Serves 2.

Physical Description

PINK PLUMES: *Polygonum bistorta; a.* Grows 4 to 18 inches; *b.* Spike of pink flowers with dark anthers; *c.* Leaves smooth and shiny green above, grayish below; *d.* Thick, twisted rootstock; *e.* Leaves at base are on long stem (petiole).

ALASKAN RHUBARB: *Polygonum alaskanum; f.*Grows 2 to 6 feet; *g.* Stems jointed, often reddish; *h.* Where leaves clasp the stem, a papery sheath is formed; *i.* Many yellowish white flowers in dense clusters (panicles).

ALPINE BISTORT: *Polygonum viviparum; j.* Grows 4 to 12 inches; *k.* Flowers white or pink; *l.* Bulblets form after lower portion flowers; bulblets fall and germinate to become new plants; *m.* Base leaves on long stalks; *n.* Twisted rootstock.

piles and itchy skin diseases. Sprinkling the root powder on a shaving cut quickly coagulates the blood; the powder blended with clay and water forms a paste used on abscesses and insect stings.

P. viviparum shares the same properties as *P. bistorta* and can be used interchangeably. Knotweed, *P. aviculare,* is used in tonic drinks to strengthen the cardiovascular system. Smartweed, *P. amphibium,* is a standard remedy for skin ailments.

Cosmetic Use

Add rootstocks of pink plumes and alpine bistort to facial steams for acne. Rhizome decoctions are used in footbaths for swollen or blistered feet. Dena'ina Athabascans chew raw bistort rootstocks to cleanse the teeth after eating fish eggs.

Historical Use

Since the Middle Ages, *Polygonum* root poultices have been applied to foul sores and bites of "serpents and venemous beasts." Sailors and explorers looked to *Polygonum* leaves for vitamin C to combat scurvy. The herb pudding Europeans traditionally serve at Easter contains pink plume, nettle, and dock leaves.

Other

Polygonum greens provide browse for moose. Rootstocks feed bears and tundra mice, and seeds nourish birds. According to *Hortus Third,* some *Polygonum* species are ". . . of ornamental value for their profusion of small, white, greenish, or red flowers and sometimes for the abundant foliage." *P. alaskanum* would be a good species to cultivate for this purpose (as well as its edibility). Even the weedier species, however, yield lovely natural dyes, and seeds make good feed for poultry and caged birds.

Caution

All species contain tannins; large amounts over long periods might spark digestive upset and possible kidney damage. Skin reactions, including hypersensitivity to light, have been known to occur in some individuals. In moderate quantities, the genus is generally regarded as quite safe.

ROSEROOT (*Sedum rosea*)
STONECROP (*Sedum* species)

OTHER NAMES: rosewort, king's crown, scurvy grass, orpine (*S. rosea*); Oregon stonecrop (*S. oregona*); lance-leaved stonecrop (*S. lanceolatum*); spreading stonecrop (*S. divergens*); broad-leaved stonecrop (*S. spathulifolium*).

Stonecrop Family (Crassulaceae)

Habitat and Range

Rocky slopes in the mountains and coastal cliffs are typical habitats for *Sedum*. I've also occasionally found roseroot thriving in the lowlands.

Roseroot (*S. rosea*) ranges from Prudhoe Bay, Alaska, and the northern Yukon south to California.

Numerous other *Sedum* species, commonly referred to as stonecrop, range throughout the Pacific Northwest. These include *S. oreganum* (Alaska Panhandle south to California), *S. lanceolatum* (southern Yukon to California), *S. divergens* and *S. spathulifolium* (British Columbia to California), as well as other California species.

Roseroot and Stonecrop: Good-natured Garden Ornamentals

Friendly, easy to grow, good natured, and tidy are all adjectives bestowed on the stonecrops by author Lewis Clark. These well-groomed plants are members of the *Sedum* genus. The name *Sedum* comes from the Latin *sedio*, meaning "to sit," and aptly describes the plants' habit of precariously perching on stony cliffs and bare rock ridges in a thimbleful of sand, rather than rooting deeply into the habitable earth.

The stonecrops are versatile plants, with more than six hundred species worldwide. They thrive in sweltering tropical jungles and on blustery Arctic shores, as well as in rock gardens in your own back yard.

Harvest Calendar

Spring: leaves. They are best before flowering occurs.

Roots of *S. rosea* have a distinctive rose fragrance.

Roseroot Omelette

2 eggs
Dash of salt
1 tablespoon milk
3 tablespoons chopped roseroot leaves

Beat eggs well. Add salt and milk. Pour egg-milk mixture into greased skillet. Add chopped roseroot leaves. When omelette is golden brown, fold in half to finish cooking. Serves 1.

Leaves of roseroot are succulent. They are most tasty before flowering occurs. (Norma W. Dudiak)

Early spring or early fall: rootstalk of roseroot. It has a distinct rose scent.

Food Use

Add young, tender roseroot and stonecrop leaves to salads, coleslaws, soups, and casseroles. When beach camping, I've served Roseroot Omelette for breakfast.

The green fleshy leaves of roseroot are high in vitamins A and C. Though raw leaves are best nutritionally, the greens can also be steamed as a potherb; many foragers prefer them topped with garlic butter or a tasty sauce.

Roseroot root (actually a rhizome or underground stem) is another food source. The Inupiat ferment roseroot in water and eat the plant with walrus blubber or other fat. Roots are dug in spring and stored in oil.

Medicinal Use

Dena'ina Athabascans drink roseroot leaf infusions and root decoctions for colds, gargle with it for sore throats, and use it as a wash for irritated eyes. In addition, Dena'ina chew the rootstalk and apply it to cuts. Bering Sea Eskimos, writes Smith in "Arctic Pharmacognosia," use roseroot flowers in medicinal teas.

In China, fleshy *Sedum* leaves are used in the same manner as aloe vera, i.e., as an application for burns and skin eruptions.

Historical Use

In *Chinese Medicinal Herbs,* Li Shih-chen reports the Chinese planted various *Sedum* species in flowerpots, and placed them on rooftops in the belief they would protect homes from fire. They also believed the herb prevented famine, thus they cultivated it around their yards on stone walls and rocky outcrops.

Though planting *Sedums* may not prevent fire and famine, the herbs themselves will certainly withstand hard times. The thick leaves retain much moisture, enabling the plant to flourish even in arid, barren soils. Should drought or difficulties ever occur, your stonecrop family garden ornamentals are likely to weather the trials and keep providing you with vitamin C-packed greens as well as beauty.

Caution

Some people have been known to experience nausea or headaches from overingestion of *Sedums*. Eat in moderation, especially if you have a tendency toward allergies.

The stonecrops are tidy, succulent plants that thrive in rocky places.

Physical Description

ROSEROOT: *Sedum rosea* ; *a*. Grows 6 to 16 inches in height; *b*. Flower clusters are showy. Flowers have 4 petals; they may have pistils only (purple) or stamens only (yellow); *c*. Leaves are fleshy, spoon-shaped, and pale-colored. They overlap in a spiral fashion; *d*. Underground stem (rhizome) is thick and rose-scented.

Fruits are often abundant and are adaptable to countless berry dishes.

SERVICEBERRY (*Amelanchier* species)

OTHER NAMES: Juneberry, Pacific serviceberry, sarviceberry, Indian pear, shadbush, saskatoon

Rose Family (Rosaceae)

Habitat and Range

Serviceberries flourish on dry slopes, and in open woods.

A. alnifolia ranges from central Alaska and the Yukon south to Oregon.

A. florida occurs locally from the Kenai and Alaska Peninsula and Alaska Panhandle southward to northern California.

Other edible species ranging from Oregon to California include *A. pallida, A. pumila* and *A. utahensis.*

Serviceberries: Versatile Fruits, Showy Shrubs

Serviceberries don't just grow on rugged hillsides, but those I've foraged and photographed all happen to be in such heart-pounding habitats. The shrubs hugged the hogback trail behind the cabin I was caretaking, and I spent many a rest stop admiring their lovely spring blossoms. Later in summer, I often quenched my thirst on their savory fruits. Beauty and bounty are merely the beginning of the services these plants render.

Harvest Calendar

Summer: ripe fruits. (In mild areas of the country they ripen in June, hence the common name "Juneberry.")

Spring to summer: bark and leaves.

Food Use

Munch serviceberries fresh from the shrub as a pleasant trail nibble. Chew them well to facilitate digestion of the many seeds. When cooked, the seeds add a pleasant, almondlike flavor.

Serviceberries are superb in pies, especially with lemon or tart fruit added. When cooked and ground, the berries (botanically "pomes") take on a gelatinlike consistency; mix with rhubarb for a fine pudding. Stewed serviceberries are a tasty breakfast dish. Add

fresh, dried, or steamed fruit to pancakes, muffins, and sweetbreads. Serviceberry Crêpes are always a welcome treat at potlucks.

For winter use, serviceberries can be canned or frozen. Process (with pectin added) into jams and jellies, or ferment into a warming wine. Fruits can also be dried in the sun or a slow oven and used as raisins. Some native groups steamed the berries before drying them; others mashed the fresh fruits, formed them into cakes, and dried them to a brick consistency. Pieces would be chipped as needed, added to soups and vegetable stews, and boiled until soft.

Pemmican is another serviceberry staple still popular with hikers. Lean meat (beef, moose, venison, etc.) is dried well, ground or pounded, and mixed with an equal amount of melted animal fat. It is then fortified with dried serviceberries, kneaded into a paste, and packed in sausage casings or a cheesecloth bag. If kept in a cool dry place, pemmican will keep for months. It can sustain a hiker for months as well. The concoction is believed to contain every nutrient man needs except vitamin C. The latter is easily supplied by a daily cup of spruce tea or a few rose hips.

Tea is still another service of this versatile shrub. Blend young shredded shoots, mashed dried berries, and dry leaves and brew into a pleasant tea.

Medicinal Use

Wild Edible and Medicinal Plants of California reports that *Amelanchier*'s boiled inner bark was an Indian remedy for snowblindness. One drop of the strained fluid would be placed in afflicted eyes three times daily.

Historical Use

In Europe, serviceberry pies and puddings were often served at holiday dinners. In America, voyageurs and Indians relied on buffalo meat-serviceberry pemmican for sustenance. Lewis and Clark mention an Indian bread made from serviceberries and ground lamb's quarter seeds. At winter festivals, the Lummi Indians boiled dry serviceberries with chum salmon.

According to Klamath Indian legends, the first people were created from serviceberry

Physical Description

SERVICEBERRY: *Amelanchier* species; *a.* Serviceberry is shrubby, sometimes a small tree. Often 3 to 5 feet high but can grow to 20 feet in good conditions; *b.* Flowers have 5 white petals; *c.* Sepals number 5. Sepals are woolly in *A. alnifolia*, smooth in *A. florida; d.* Upper leaf is toothed, lower has smooth edges (margins); *e.* Fruit (botanically a pome) is blue-black with many seeds.

Serviceberry Crêpes

Contributed by Deiv Rector of Homer, Alaska

Crêpe:
1 cup flour
1/3 cup apple juice (optional)
2 eggs, beaten
1 cup milk
Dash salt

Filling:
16 ounces (1 container) ricotta cheese
2 egg yolks
1 teaspoon salt
2 tablespoons fresh lemon juice
Chopped lemon rind
1/2 cup honey

Topping:
2 cups serviceberries
1/2 cup chopped rhubarb
1/2 cup honey

Mix crêpe ingredients together. Add 1/4 cup batter to hot oiled griddle. Tip pan gently to spread batter well. When brown on one side, turn and cook until golden on other. Place crêpe in oven to keep warm until all crêpes are cooked. Blend filling ingredients well. Place heaping spoonful on each crêpe. Roll crêpes up and return to oven. Combine topping ingredients. Simmer 15 minutes, stirring frequently. Process through food mill (or blender) and then spread on top of crêpes. Serve immediately. Serves 4.

bushes. For many native peoples, *Amelanchier* shrubs were vital to well-being. Besides providing staple fruits, they yielded straight shoots for making arrows, wood for spreaders for rigging line for fishing, material for making disks for recreational gambling games, and items for barter. The 1977 municipal manual of the city of Saskatoon, Canada, states that the city is named after the Cree Indian word for serviceberry, *mis-sask-quah-toomina.* Local Indians used to gather large quantities of these berries and peddle them through the white settlement. Their advertising call, misinterpreted as "Saskatoon" became the name of that community.

Other

Botanically, there are about twenty-five *Amelanchier* species in the North Temperate Zone. The shrubs are extremely winter hardy and thrive on a wide range of soil types. Habitat can vary from lowland bog to alpine ridge. Propagate by seeds and suckers. *A. alnifolia* can grow to a small tree (up to twenty feet high) but suckers must be removed; otherwise bush-type growth results. *A. florida, florida* meaning "many-flowered," is another attractive northern ornamental. In spring serviceberry's masses of white blossoms are an aesthetic delight, and in fall the yellow-orange leaves add more color to the garden.

Summer fruits are, of course, a good source of food. You can harvest fruits easily with a berry rake or common comb with large teeth. Clean them of debris by filling your berry bucket with water. The leaves will float to the top. Ethnobotanists Nancy Turner and Adam Szczawinski, in *Edible Wild Fruits and Nuts of Canada,* describe an Indian method of cleaning berries by rolling them down a damp board; the leaves and twigs stick to the wood and the berries roll neatly into the waiting bucket.

Besides providing beauty and bounty, serviceberries also attract birds and other wildlife. They are, indeed, a berry of many services!

SILVERBERRY *(Elaeagnus commutata)*

OTHER NAMES: silver buffaloberry, wolf willow *(E. commutata)*; Russian olive, oleaster *(E. angustifolia)*; cherry elaeagnus *(E. multiflora)*

Oleaster Family (Elaeagnaceae)

Habitat and Range

Silverberry flourishes along gravel river bars and dry slopes.

E. commutata, commonly called silverberry, ranges from central Alaska and the Yukon to central California.

Other species of local interest, often used in ornamental landscaping include *E. angustifolia* (British Columbia and California) and *E. multiflora* (British Columbia).

Silverberry: Fragrant Shrub of Gravel Bars

I was resting on the shores of the Matanuska River on a balmy summer evening when a haunting fragrance kept wafting in the camper windows. The next morning, with my nose to the scent like a bloodhound on a trail, I finally discovered the source of that exquisite perfume — silverberry blossoms!

This shrubby member of the Oleaster family is a delightful plant to know; it's the sort of "unusual" plant that's highly popular as a garden ornamental. Its leaves, rather than being green, are the color of the Lone Ranger's bullets. Its fruits, which are also silver, are relished by a variety of birds. And the flowers, which lack true petals, are distinctive in shape and have a delightful aroma that lingers long on the mind.

Harvest Calendar

Early summer: leaves and flowering stems.
Late summer: fruits.

Food Use

Silverberries may be eaten raw but are rather dry and mealy. They are somewhat better cooked. Donald Kirk, in *Wild Edible Plants of Western North America*, recommends adding them to soups, or using them for jelly. In *Flora of Alaska and Neighboring Territories*, Hultén writes that natives eat them cooked in moose fat.

The fragrant tubular flowers and silver foliage all make silverberry a most distinctive shrub.

Silverberry Oil

4 cups silverberry twigs with blossoms
4 cups almond oil
Liquid vitamin E

Let fresh twigs with blossoms stand 6 hours to wilt slightly, then place in large glass jar. Cover with oil. Cap tightly. Place in sun daily for 2 weeks, shaking daily. When time period has elapsed, strain well through clean linen towel. Squeeze well to extract as much oil as possible. (Herbalist Don Ollsin suggests using a potato ricer to press out the oil.) Discard silverberry twigs and rebottle oil. Add 1 dropper liquid vitamin E per cup oil as natural preservative. Add a capful of silverberry oil to your bath water, or use as massage oil or facial oil.

Medicinal Use

I've found no medicinal uses reported specifically for *E. commutata*. In China, the root of *E. longipes* is decocted as a wash for foul sores of humans and mange of animals, and leaves are used for relief of a cough.

Cosmetic Use

Silverberry flowers are well worth experimenting with for making perfumes and other cosmetics. I like making silverberry blossom oil for massaging tired bodies.

Other

The genus name, *Elaeagnus*, is a composite of *elais* (olive) and *agnos* (the Greek word for the Chaste Tree). The specific name *commutata* means "changed" and refers to the changed color of the leaves, i.e., silver rather than green. Worldwide, there are over forty species in the *Elaeagnus* genus; many are natives of Europe and Asia.

Silverberry is very hardy and worth introducing to the home garden. It does well in sunny locations in poor, but well-drained soil. *Hortus Third* recommends propagating by hardwood and root cuttings, layering, and grafting. Seeds should be stratified; germination generally doesn't occur until the second spring. The shrub, besides being physically aesthetic, will enchant you with the haunting fragrance of its blossoms.

Physical Description

SILVERBERRY: *Elaeagnus commutata; a.* Shrub to 12 feet high; *b.* Leaves are silvery on both sides; *c.* Brown scurfy spots on leaves and twigs; *d.* Dry, mealy, silver-green fruit often found on shrub with blossoms. Fruits over-winter on shrub; *e.* Stems are gray to reddish; *f.* Fruit is botanically called a drupe; *g.* Flowers are silvery outside, yellow inside, and very fragrant. The sepals flare outward; they are often mistaken for petals (which the flower lacks). Flowers have 4 stamens and 1 short style.

SOAPBERRY *(Shepherdia canadensis)*
BUFFALOBERRY *(S. argentea)*

OTHER NAMES: soopollalie, russet buffaloberry *(S. canadensis)*; silver buffaloberry *(S. argentea)*

Oleaster Family (Elaeagnaceae)

Habitat and Range

Both soapberry and buffaloberry favor open woods, gravel soil, and dry slopes.

Soapberry, *S. canadensis*, ranges from northern Alaska and the Yukon to east-central Oregon.

Buffaloberry, *S. argentea*, ranges from inland British Columbia to southeast Oregon and eastern regions of California.

Note the brownish, scurfy coating on soapberry leaves and twigs. (This trait is also characteristic of silverberries, but silverberries have distinctive silver foliage.) (Norma W. Dudiak)

Soapberries: Indian Ice Cream and Camper's Dish Soap

Experimenting with wild plants leads to stunning successes as well as comic failures. Soapberry brings to mind my attempt at using "fruit shampoo" during a summer class at the University of Alaska. Though it produced a soapy lather, washing out the mashed fruits was quite a task! On my next soapberry encounter, I intend to repeat the experiment, but with the strained fluids from the boiled fruits.

Harvest Calendar

Summer to fall: soapberries (reported sweeter after a frost).

Food Use

Alaskan natives relish soapberries whipped with sugar and a little water. This makes a foamy dessert dubbed Indian Ice Cream. The foaming action of the whipped berries is caused by the presence of substances called saponins; when beaten, the fruits act much like egg whites or whipping cream. But be prepared, as this gives the fruits a unique flavor (which some liken to turpentine!).

Soapberries can be mixed with sweetener and a larger concentration of water for a lemonadelike beverage. The fruits are sometimes used for jelly-making; for best results, pick after a frost and combine with sweet berries.

Medicinal Use

Soapberry infusions (steep one tablespoon stems and leaves in one cup water) have been drunk as a tonic beverage. Dena'ina Athabascans drink soapberry decoctions for tuberculosis, and use it as a wash for cuts and swellings.

Historical Use

One old name for *S. canadensis* is buffaloberry. In western states, this shrub was often grazed by bison. Pioneers also made the berries into a sauce for their buffalo steaks. (When available, settlers used the silver buffaloberry, *S. argentea*, which has a superior flavor.)

According to a Bella Coola Indian myth, soapberries were introduced to the northern British Columbia mountains by Raven. Raven is said to have stolen them from a selfish chief who was hoarding the shrubs.

Other

The Chinook name *soopallalie*, which translates as soapberry, refers to *S. canadensis*. The genus name, *Shepherdia*, honors British botanist John Shepherd. There are only three species native to North America. All are shrubs or small trees; they are sometimes grown as ornamentals and do well in dry, rocky soils.

Indian Ice Cream

2 cups soapberries
1/2 cup water
1/2 cup sugar

Mix soapberries with water and beat until foamy. (Traditionally this is done with the hands, but a beater may be used if desired.) Slowly add sugar, a little at a time, and whip until a stiff foam results. Serve at once. Serves 2.

Though my soapberry shampoo wasn't overwhelmingly impressive, I have successfully used soapberries and horsetail to scrub dirty pots and pans when camping. The saponin-rich fruits combined with the silica-rich horsetail did a fine job. Possibly the berries could be used in home soap-making.

Caution

Saponins are irritant substances that can, in excess, cause cellular damage and gastrointestinal irritation. Small quantities of saponins are contained in many foods we consume, such as green tea and beets; they're also often used as a food additive. "Little information is available documenting types or quantity of saponins in *Shepherdia* fruits," writes Turner and Szczawinski in *Edible Wild Fruits and Nuts of Canada*, "but the enthusiastic foaming action makes it appear the amount is substantial." Eaten in reasonable quantities, soapberries are not known to cause any disturbance. Soapberries are one of the plants known to concentrate mercury. In polluted areas, eating soapberries could be a health hazard.

Physical Description

SOAPBERRY: *Shepherdia canadensis* ; *a*. Shrubs 3 to 8 feet high; *b*. Leaves are smooth and green on top; *c*. Underside of leaves are whitish with rusty scales; *d*. Leaves are in opposite arrangement; *e*. Fruits are bitter, orange-red to red in color, found only on female plants; *f*. Coppery, scurfy coating on stems; *g*. Male and female flowers found on separate plants. Male flowers have 8 stamens and 4 scaly modified yellowish leaves (bracts). Female flowers have a scaly cup; at its tip is a disk with 8 lobes; *h*. NOTE: In regions where soapberry and buffaloberry co-exist, the latter can be easily identified by its thorns and leaves that are shiny on both sides.

SORREL (small *Rumex* species)
MOUNTAIN SORREL *(Oxyria digyna)*
DOCK (large *Rumex* species)

OTHER NAMES: sourgrass, field sorrel, common sorrel, sour sauce (*Rumex* species); yellow dock (*R. crispus*); Arctic dock (*R. arcticus*); blunt-leaved dock (*R. obtusifolius*); sourdock, wild spinach, Indian tobacco, garden patience, wild pie plant, garden sorrel (*R. acetosa*); sheep sorrel (*R. acetosella*)

Buckwheat Family (Polygonaceae)

Habitat and Range

Sorrels are often found in waste areas, and along gravel roadsides. Docks favor wet, disturbed soil and roadside ditches.

Numerous *Rumex* species occur throughout the Pacific Northwest. *R. crispus*, *R. fenestratus*, *R. transitorius*, and *R. acetosella* are some of the species common from Alaska and the Yukon to California.

Oxyria digyna, mountain sorrel, also ranges throughout the Pacific Northwest.

Sorrel and Dock: Sour Taste, Sweet Uses

Sorrels and docks are both characterized by tart, lemon-tasting leaves. Except for mountain sorrel, which belongs to the *Oxyria* genus, sorrels and docks are members of the *Rumex* genus. Generally the taller, leafy, leggy-stemmed species are referred to as dock, while the smaller (and to me, better-flavored) species tend to be called sorrels. Food uses are quite similar. (See Caution, following.)

Harvest Calendar

Spring: leaves and young stems.

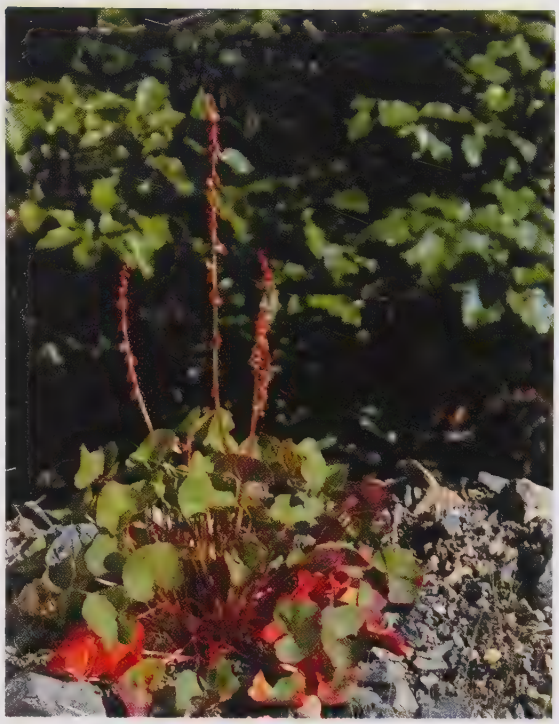
Late summer: seeds.

Fall after frost: new leaves (for food) and roots (for medicinal use).

Food Use

In 1653, Culpeper complained that:

> All dock are boiled with meat and are as wholesome a potherb as any growing in a garden; yet such is the nicety of our times . . . that women will not put it into



Mountain sorrel is in the *Oxyria* genus, but has uses similar to the *Rumex* sorrels.

Docks are characterized by large sour leaves and showy clusters of flowers and seeds.

Physical Description
SORREL: small *Rumex* species; *a*. Leaves are sour-tasting. Leaves vary from long and narrow (*R. graminifolius*) to arrowheadlike with the basal lobes turned outward (*R. acetosella*, illustrated); *b*. Flowers are on elongated stalks; blossoms are tiny, often reddish in hue. Stalks vary from 6 inches to about 2 feet high.

> a pot. . . . Pride and ignorance (a couple of monsters in the creation) preferring nicety before health.

Today, patches of dock and sorrel are still bypassed for expensive store-bought spinach and greens. The wild *Rumex* and *Oxyria*, however, well deserve notice and use. These young greens enliven salads and dressings. I especially relish a blender dressing of oil, vinegar, dock or sorrel, and other seasonings. When hiking, I like chewing a few mountain or sheep sorrel leaves as a thirst-quenching snack (see Caution, following).

In the Alaskan Interior and Arctic, natives gather large quantities of dock for winter use. Some Inupiat families cook dock until it forms a pureé; others prefer less cooking and more leaf texture. The cooked dock is blended with berries, blubber, and seal oil and stored in wooden kegs. After the mixture reaches the desired state of fermentation, daily stirring is necessary to preserve the mixture (until freeze-up occurs).

Grace Johnson of Nome, Alaska, says she enjoys dock boiled until wilted and topped with a bit of sugar. Sorrel is especially tasty with fish; for a green sauce superb with trout, sauté chopped sorrel in butter with a splash of vinegar. Alaskan botanist Boyd Shaffer highly recommends blending sorrel with butter in a blender, rolling the mixture in waxed paper, and freezing the herb butter; place a slice of sorrel butter on a barbecued steak or vegetable casserole just before serving.

Young sorrel and dock leaves can be simmered in water as a wilderness lemonade. Spike with honey and serve hot or cold. Mix the greens with spinach as a dressing for lamb or pork. For a taste treat, add dock or sorrel to boiled dinners. Dry *Rumex* and *Oxyria* as seasonings, and sprinkle on rice, potatoes, seafood, and sandwich spreads. The French use garden sorrel *(R. acetosa)* as the base of their famous *soupe aux herbes*.

I commonly add dock and sorrel to Wild Herb Casserole. This dish is ideal for potluck suppers and spur-of-the-minute meals, as the ingredients adapt well to whatever is in season.

Rumex seeds are another food source. To collect, clip the stalks and hang upside down with a paper bag over the plant. When dry, shake well. To clean the seeds, rub them between your hands to loosen the husk and then winnow on a windy day. Raw or roasted seeds may be eaten as a snack, added to rice and casseroles as a seasoning, ground as a flour extender, or boiled as a hot cereal.

Dock and sorrel greens can be preserved by blanching (for one minute) and freezing. If you missed gathering spring leaves, watch carefully in fall after frost; a crop of new green leaves is often available. (Do not eat any tough or red-colored leaves.) Young stems can be chopped and simmered with honey or used for mock rhubarb pie.

Medicinal Use

Yellow dock (*R. crispus*) is the species preferred medicinally. The California School of Herbal Studies says yellow dock root is one of the best sources of assimilable iron. The school recommends one dropper (thirty drops) of the tinctured root be taken three times daily by pregnant women and those troubled with anemia, hepatitis, or liver damage.

In *Medicinal Plants of the Mountain West*, Moore reports yellow dock contains "...chrysophanic acid and emodin, as well as variable but substantial amounts of tannin. Its primary uses are for treating constipation, blood disorders, skin diseases, rheumatism,

Physical Description

MOUNTAIN SORREL: *Oxyria digyna; a.* Basal clusters of sour, kidney-shaped to round leaves on long stems. Stems grow 6 to 12 inches high. One leaf per stem. Leaves turn reddish in late summer; *b.* Fruits are flattish with red wings; *c.* Small reddish-green flowers with 6 stamens develop on elongated stem; *d.* Stout rootstock.

DOCK: large *Rumex* species; *e.* Flower clusters are on elongated stems that may reach 4 feet high; *f.* Sour-tasting spring leaves are in a basal cluster. Leaf margins may be smooth *(R. arcticus)* or wavy *(R. crispus and R. longifolius); g.* Seeds can be collected and ground for flour.

Wild Herb Casserole

Contributed by Rosemary Gladstar of Guerneyville, California

1/2 gallon edible greens of your choice
Cooking oil
6 eggs
1 1/2 cups flour
1 1/2 cups milk or cream sauce
1/2 cup grated Cheddar cheese

Gather wild greens. Clean and chop greens and set aside. Pour a thin layer of oil in the casserole dish. Fill dish with chopped greens. In blender or bowl, mix eggs, flour, and milk or cream sauce. Pour egg mixture over greens in casserole dish. Top casserole with grated cheese. Bake at 425°F for 25 minutes. Serves 4.

(NOTE: In spring I often use nettles, dandelion leaves, fireweed shoots, and chickweed as the base, with dock, sorrel, and fiddleheads added for flavor and texture. In summer, I add edible flowers to the casserole and mix garden greens with available wild ones. Experiment!)

and indigestion." Some modern herbalists advocate dock root decoctions to cleanse the system of concentrations of lead, arsenic, and other heavy metals.

Yellow dock root is added to salves for itchy skin ailments and insect bites. In the field, you can slice and mash the fresh root as a poultice for bee stings, boils, or bleeding. Mashed dock leaves are an ancient treatment for nettle rash.

A Yup'ik informant reports drinking dock leaf juice for colds and upset stomach. Smith, in "Arctic Pharmacognosia," says Aleuts steam leaves of sorrel *(R. acetosella)* and apply externally to warts and bruised skin.

Cosmetic Use

Dock and sorrel leaves are added to facial steams for skin eruptions. The tea is used as mouthwash and gargle. The powdered root of yellow dock is recommended in toothpowder for those troubled by spongy gums. Leaves and roots are ingredients in herbal oils and salves.

Historical Use

In Scandinavian countries, sorrels and docks were commonly ground into flour during times of famine. In America, various Indian tribes boiled *Rumex* leaves with salmon roe and berries, dried the mixture into cakes, and used them as a winter and trail food and an item of trade. Early settlers and explorers relied on the greens for food and to prevent scurvy. In Lapland, the acidic herbs served as a rennet substitute to curdle milk.

The binoxalate of potash salts that give the plants their sour taste is extracted commercially from *R. acetosa.* Mrs. Grieve, in *A Modern Herbal,* says it takes twenty pounds of fresh herb to produce six pounds juice, from which two to three ounces of crystallized salts (called essential salts of lemon) are obtained. The salts are marketed for removing ink stains from linen, water spots from wood, and rust stains from clothing (as well as bathtubs and toilets). In Europe the salts are sold under the name "salts of lemon." In Alaska "oxalic acid" is sold over the counter in drug stores. (See Caution, following.)

Rumex roots, greens, and flowers are traditional dye plants. Grae, in *Nature's Colors,* says dock roots boiled with unmordanted wool or cotton yields pale to deep gold hues with good lightfastness; during the California mission days, this color was dubbed "Padre's gold." *Rumex* dyes range from rose beige to dark greens and grays depending on species, plant part, and mordant used.

Other

Garden sorrel, *R. acetosa,* is especially cultivated for its greens. The plant grows much larger, choicer leaves in cultivation than in the wild. Sorrels and docks are easy to grow; they reproduce so well, in fact, many consider them a troublesome weed. A field full of dock, however, can be a plus rather than a problem. Charles Walsh of Fairbanks, in *Foraging in Alaska for Fun and Profit,* says that "dried split roots are marketable in large quantities; whole dried flower-spikes are bought by florists." Walsh adds that eight hundred pounds wet root per day (the harvest of an average forager) yields three hundred pounds dry, marketable root.

Though *R. crispus* is preferred, other *Rumex* species also have commercial potential.

Caution

Sorrel and dock contain oxalic acid (a substance also found in beets and spinach, and in high concentration in rhubarb leaves). Oxalic acid binds with calcium from body tissues, forming calcium oxalate crystals. Symptoms of oxalate poisoning include muscle spasms, burning pains in the mouth and throat, cramps, and stomach pains. According to *Clinical Toxicology of Commercial Products*, "the systemic effects can be explained . . . by the calcium-complexing action of oxalate, which depresses the level of . . . calcium in body fluids. This hypocalcemia produces severe disturbances . . . of the heart and . . . nervous system; death may result from either of these disorders." In *Herbal Medications*, Spoerke says "the kidney is especially susceptible to the mechanical damage since the crystals are concentrated there for excretion."

Clinical Toxicology of Commercial Products adds that "large amounts of calcium are required to inactivate oxalate by precipitating it as the insoluble calcium salt." If a poisoned individual is unable to obtain immediate medical treatment, pharmacist Ed Carli recommends that as first-aid treatment calcium carbonate antacids (such as Tums), or large amounts of milk or yogurt should be given the patient. (See Treatment of Acute Poisoning at the back of the book.)

Though high in nutrients, raw sorrel and dock should be eaten in moderation only, due to the presence of oxalic acid. Only YOUNG sorrel and dock leaves should be consumed. As the plants age, oxalic acid concentrations increase. Heat and freezing breaks down the toxin, therefore cooked plants are safest for consumption.

Some sensitive individuals experience dermatitis when handling leaves of sorrel and dock. Another possible hazard is bowel irritation from over-ingestion of dock's tannin-rich roots. *R. hymenosepalus*, in particular, contains up to thirty-five percent tannin. (According to Walter Lewis in *Medical Botany: Plants Affecting Man's Health*, this species also contains leucodelphinidin and leucopelargonidan, substances used in cancer chemotherapy.)

Lousewort first appears dressed in a thick, woolly covering. (Jon R. Nickles)

WOOLLY LOUSEWORT (*Pedicularis Kanei* also known as *P. lanata*)

OTHER NAMES: Arctic lousewort, fernweed, bumblebee plant, Indian warrior.

Figwort Family (Scrophulariaceae)

Habitat and Range

Woolly lousewort is a plant of dry stony tundra and alpine slopes. Range extends from northern Alaska and the Yukon to British Columbia.

There are numerous *Pedicularis* species distributed throughout the Northwest. Their habitat varies from meadows to muskeg. All are reported edible, though some have roots too small to be of interest.

Woolly Lousewort: Best-Dressed Herb in the North

The first lousewort I encountered was huddled in its woolly overcoat on Barrow's tundra, while I crouched in a warm parka marveling at our similar adaptations to the environment. *Lanata,* the specific name preferred by many American authors for *P. Kanei,* translates as "woolly" and aptly describes this herb that sports a fuzzy layer of insulation until more clement weather arrives. As the sun beckons, spikes of rose-pink blossoms burst through the gray wool and brighten the landscape.

Harvest Calendar

Late spring: shoots and leaves.
Summer: flowers.
Fall (or early spring): roots.

Food Use

Young lousewort leaves and tender stems may be steamed lightly as a potherb, or added to soups and casseroles. *Wild Green Vegetables of Canada* mentions that Inuit children like to suck the nectar from lousewort flowers; the sweet blossoms are a delightful salad garnish.

The Inupiat pick lousewort in June when the flowers appear. The young flowering tops are placed in a barrel, covered with water, and

fermented like sauerkraut. Sometimes they are eaten with oil and sugar.

Roots can be dug in early spring or fall. Scrub well and nibble raw, or serve boiled, baked, or stir-fried. Add lousewort to soups and stews. Candy roots like yams, or steam like carrots. Try Cheesy Lousewort as a vegetable side dish while camping.

Medicinal Use

Pedicularis species are noted for their sedative effects. Moore, in *Medicinal Plants of the Mountain West*, recommends steeping one-half to one teaspoon of the flowering stalk for youngsters, up to one tablespoon for adults. Moore says "it acts as a mild relaxant for skeletal muscles and the cerebrum, quieting anxieties and tension." (See Caution, following.)

Historical Use

In the seventeenth century, Culpeper advocated boiling *P. sylvatica* in port wine and drinking the decoction for ulcers. In China, *P. reupinata* (whose foliage has the odor of horse manure) has been used for fevers, rheumatism, sterility, and urinary problems.

Other

The genus name, *Pedicularis*, translates as "little louse" (the singular of lice). It was once believed that animals grazing on this plant would become infested with these parasitic pests. Powdered plants were used on hair and wigs to repel lice.

It is interesting to note that the reason transplanting lousewort to rock gardens is difficult is because most *Pedicularis* species are at least partially parasitic on roots of other plants; under cultivation, they may not find the proper hosts.

Caution

Due to its sedative properties, lousewort should be used in moderation. Potency varies with species (and possibly soil conditions). An overdose of *Pedicularis*, says Moore, can cause "... a befuddled lethargy and some interference with motor control, particularly in the legs." He adds this is a "... short-term discomfort of minor consequence."

Cheesy Lousewort

3 cups lousewort roots
Salt and pepper
3 tablespoons butter
1/4 cup Parmesan cheese

Scrub large lousewort roots well. Chop. Place in foil. Sprinkle with salt, pepper, butter, and Parmesan cheese. Wrap well. Place on campfire coals until tender. Serves 2.

Physical Description
WOOLLY LOUSEWORT: *Pedicularis Kanei;* *a.* Grows to about 6 inches; *b.* Flowers are covered with dense wool when young; *c.* Petals are rose pink to purple (some species are yellow). Flowers have hooded upper lip; *d.* Seed capsules are brown, on elongated stalks; *e.* Basal leaves are numerous. Leaves are pinnately divided into many segments; *f.* Taproots are thick and fleshy.

A. Tilesii grows prolifically on coastal bluffs and roadsides, as well as in the mountains.

WORMWOOD (*Artemisia* species)

OTHER NAMES: stinkweed, caribou leaves (*A. Tilesii* also known as various variations of *A. vulgaris*); Arctic artemisia (*A. arctica*); prairie sagewort (*A. frigida*)

Composite Family (Compositae)

Habitat and Range

Habitat varies from stream banks and coastal beaches near creeks to dry slopes and mountain meadows.

A. Tilesii and its various subspecies are quite widespread throughout Alaska, the Yukon, and British Columbia. The similar *A. Douglasiana* ranges from Washington to California.

Numerous *Artemisia* species are distributed in our region. Species are quite variable in appearance, ranging from the low-lying, short-leaved *A. frigida* (Alaska and the Yukon to British Columbia and eastern Washington) to the waist-high, irregularly lobed *A. Tilesii*.

Wormwood: Soothing for Aches and Pains

Wormwood is to Interior Alaska as devil's club is to the Panhandle — the native "herb of choice" for many medical complaints. On my travels throughout the state, wormwood was the prime medicine plant displayed during interviews.

The silvery-leaved plant with the aromatic foliage has a long history of use. In the Bible, it's mentioned as one of the bitter herbs eaten during Passover. King Henry VIII hung *Artemisia* in his closet as a deodorizer. A sixteenth-century poet, Thomas Tusser, in his *Five Hundred Pointes of Good Husbandrie* wrote:

> While wormwood hath seed, get a bundle or twain
> to save against March, to make flea to refrain:
> Where chamber is swept, and wormwood is strewn,
> no flea, for his life, dare abide to be known.

Fulfilling religious regulations, freshening the air, and repelling fleas are the mere tip

of the iceberg of wormwood wonders. This favorite of the ancients is certain to find an application in your modern household.

Harvest Calendar

Late summer: leaves and flowering tops. (Wormwood is as versatile in harvest time as in use. A Yup'ik informant says she picks the herb in fall when it is dry. An Inupiat user prefers collecting the dry, wintered-over stalks in very early spring. I generally harvest leaves and flowering tops around August, but will collect leaves earlier in the summer if I need an herb for footbaths or massage oil.)

Food Use

Since wormwood is intensely bitter, food use is "as a spice." It is most commonly used to season corn, cornmeal, and New Mexican dishes (such as posole) and to flavor poultry and fish stuffings. Use a light touch as the herb can be overpowering. (See Caution, following.)

Medicinal Use

Wormwood gets its common name from its use as a wormer for people and pets. *Medicinal Plants of the Mountain West* advises drinking two cups a day of wormwood tea for one to two weeks as a treatment for roundworms and pinworms (use one teaspoon dry herb per cup water). For animals, the powdered flowering tops can be mixed in their feed; Mairiis Davidson-Hollister of Homer, Alaska, says that the herb is a favorite of her horses.

The genus name *Artemisia* is named after Artemis, the Greek goddess of the moon and female energies. The *Artemisias* are commonly employed as a cure for "female complaints"; wormwood tea is said to be helpful when menstruation is crampy or delayed due to physical or emotional trauma.

Wormwood teas and tinctures are my favorite remedy for colds. Pour two cups boiling water over one-fourth cup leaves and flowers and steep for five minutes; sip mouthfuls of the tea throughout the day. Or you can take a dropper of wormwood tincture (straight or diluted in a cup of water). When you're sneezing, sniffling and all stuffed up, the bitter taste isn't nearly as noticeable.

Physical Description

WORMWOOD: *Artemisia* species; *a. A. Tilesii* grows to 3 feet in height. (Some *Artemisia* species are short and matted.); *b.* Flowers are composite, that is, having both ray and disk flowers. Flowers are ball-like and arranged in clusters. Color varies with species from yellow to brown to purplish-black; *c.* Underside of leaves of *A. Tilesii* is silvery; leaves are irregularly lobed and have a strong scent; *d.* Leaves of *A. arctica* are feathery (bipinnately dissected). Leaves of *A. frigida* are short and thin, with a silky, silvery appearance. Consult a flora for a complete description of species.

Fisherman's Friend Liniment

1 cup wormwood leaves and flowers
1 cup nettle leaves
1 cup devil's club root bark
1/2 cup mustard leaves, flowers, and pods
4 cups 160-proof vodka

Place herbs and vodka in jar and shake well. Keep in cool dark place; shake 1 or 2 times daily for 2 weeks. Strain. Use as a rub on sore muscles. (This may be diluted with an equal amount water, if desired. Adjust the strength according to your needs.)

Wormwood tea, being a bitter agent, stimulates the gastric secretions. For settling upset stomach and heartburn, or countering the effects of overindulgence, a few sips of wormwood tea or tonic wormwood wine is often helpful. To prepare the latter, just place a few wormwood sprigs in a bottle of white wine; let it age two weeks.

Chew wormwood leaves for sore throat (or gargle with a decoction of the herb). For pyorrhea, place a few macerated leaves against the gums. For nasal congestion, stuff a few rolled-up wormwood leaves inside your nostrils, or boil wormwood in a pan of water, and deeply inhale the vapors.

The *Artemisias* are a traditional sauna herb. Place moistened wormwood on hot sauna rocks, and sprinkle the herb with water to release the aromatic oils. When a friend strained her back, she relaxed in a wormwood scented sauna as I applied hot wormwood packs to the injury; the next morning, she was able to move without pain.

Old-time Athabascans, reports Priscilla Kari, used wormwood ". . . in the steambath for a woman who was going to have a baby." Soaked wormwood leaves were rubbed on the woman's body and applied to the stomach as a poultice.

Today, the Dena'ina still use wormwood (picked before flowering) as a sauna switch. Elder Peter Kalifornsky told me that you can actually "taste wormwood in your mouth" after you switch yourself with the herb, indicating the herb's absorption into the bloodstream. I've noticed the same effect after just handling quantities of wormwood.

Smith, in "Arctic Pharmacognosia," reports that Aleuts heat leaves of *A. unalaskensis*, and apply them externally to muscular aches and minor wounds. *A. Tilesii* is used extensively along the western coast of Alaska. Three sesquiterpene lactones have been isolated from Unalakleet, Alaska, *A. Tilesii* specimens; Smith adds that the plants were used as fever and infection inhibitors, and antitumor agents.

I know a surgeon's wife who was scheduled for a skin cancer operation. A native friend gave her "stinkweed" *(A. Tilesii)*, and called her repeatedly, reminding her to hold the herb on the cancerous area for fifteen minutes each day. After a week of stinkweed treatment, doctors canceled the woman's operation as her symptoms had disappeared.

Mamie Beaver of Kotzebue, Alaska, described how she "healed a white guy's sores" with poultices of wormwood. Wormwood tea, claims Mrs. Beaver, will cure any cold within two days. In St. Marys, Justina Mike recounted giving wormwood poultices to a friend whose hands were so swollen she was unable to work. After applying wormwood poultices for a week, the condition completely cleared.

Cloths soaked in decoctions of wormwood (or diluted tincture) are also used to relieve pain and swelling of sprains and bruises. I prepared the accompanying liniment for a fisherman whose hands were aching from gear work and cold waters.

Wormwood footbaths are very soothing for feet tired from a long hike. The herb is also recommended for scorpion or jellyfish stings; when visiting tropical regions, I always add a bundle of *Artemisia* to my backpack.

Cosmetic Use

Wormwood is an ingredient in natural deodorants, hair tonics, and liniments. In herbal baths, it's very soothing to sore muscles. *Herbs & Things* recommends wormwood leaves, soaked in rum, as a rub for fallen arches.

Historical Use

Wormwood's use is recorded in ancient documents: from papyruses dated 1600 B.C. to Shakespearean plays and the classic herbals. It's one of the herbs traditionally smoked in hilltop summer solstice bonfires (St. John's Day) to ward off evil influence.

Placed under the doormat, wormwood was believed to keep away annoying people; over the doorway it kept the home safe from lightning. Hung inside the room, it deodorized the house and repelled moths as well as the devil! The French, who called the herb *garderobe*, used wormwood in their closets to keep woolens free of pests.

Since medieval times, wormwood has been associated with magic and medicine. Travelers traditionally gathered a leaf before dawn and placed it in their shoes to ward off fatigue; today, Dena'ina Athabascans put it inside their socks to cure athlete's foot. Used in either manner, the aromatic herb definitely freshens the feet and wards off foot odors.

According to legend, wormwood sprang to life in the tracks of the infamous serpent of Eden as he slithered out of the garden. Snakes and beasts and boogeymen of all sorts are supposed to be repelled by wormwood salve. Wormwood is a good ingredient in your daypack in bear country; even if the "magic" fails, the medicine won't.

Other

Artemisia is a good garden herb. Grow from root divisions in spring or fall, or from seed. It's often used as a pest-repelling border. Chopped wormwood leaves, spread in a circle around young cabbage plants, helps protect them from infestation. For slugs, blend the chopped herb with sharp pebbles and place around the plants; slugs dislike both the wormwood scent and the rocky passage.

The herb can also be fashioned into an insect-repelling spray. When camping try rubbing yourself with wormwood leaves for protection from buzzing flies; place a sprig of wormwood in your hat. Burn leaves in your campfire to repel mosquitoes.

A tobacco substitute is still another wormwood use; it's added to herbal smoking mixtures. Some say that smoking wormwood flowers "gets you high," but all my field test volunteers reported were high-quality sore throats, which chewed wormwood leaves helped to soothe. *Artemisia* is also commonly burned as an incense for ceremonies, as when christening a new house or cleansing an atmosphere after great turmoil.

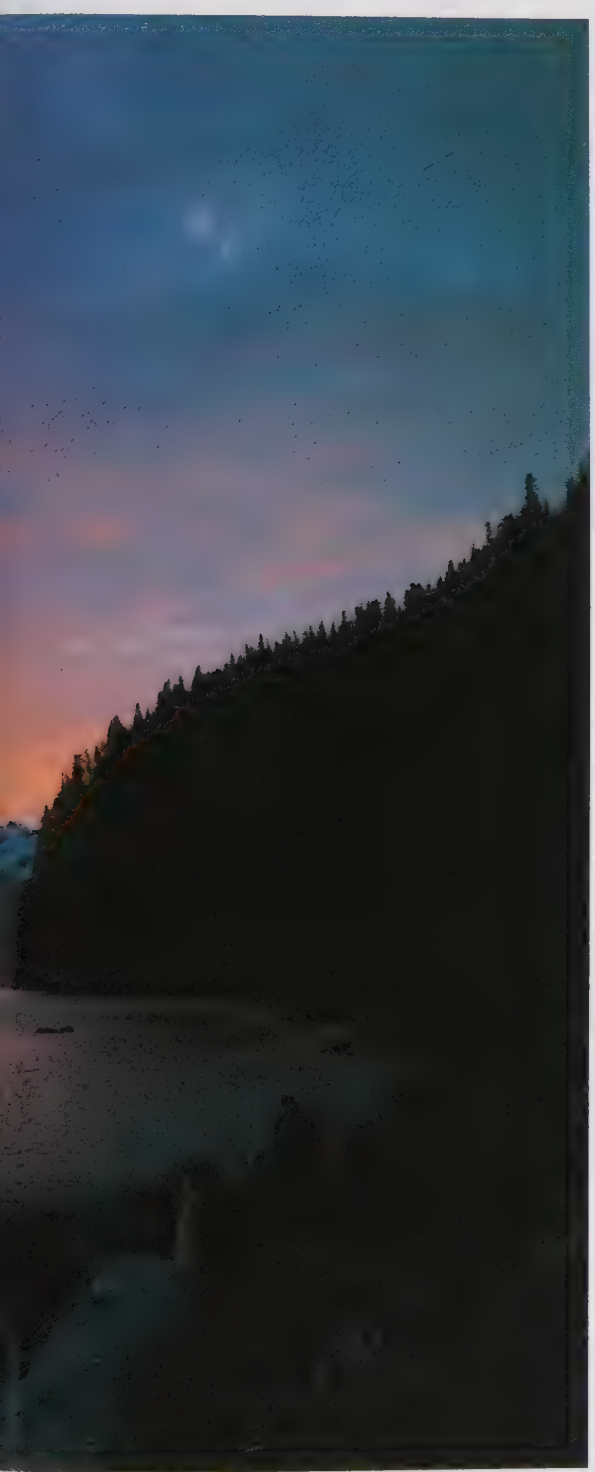
Wormwood is often referred to as "the psychic herb"; it's a principal ingredient in dream pillows. I had to evict my disquieting wormwood pillow from bed until I blended it with calming valerian and pineapple weed.

In the twelth-century poem, "Lay of the Nine Herbs," wormwood was one of the "nine herbs of power." Herbalist Sebastian Kneipp descripes it as one of the three herbs (along with yellow gentian and sage) that constitutes "an entire garden pharmacy."

A. absinthium, a European species naturalized in the eastern United States and Canada and occasionally found in California and other Western states, was used to make a now-illegal alcoholic beverage—absinthe. In small amounts, absinthe was considered a good digestive aid. In more than moderation, convulsion, epileptic-type seizures, and even insanity resulted.

Caution

Though wormwood can be used freely for external use, it should be taken internally in small quantities only. The volatile oil, absinthol, which made absinthe so deadly, is present in some degree in the foliage of many of the Northwestern *Artemisias*. Taken in large doses repeatedly, the substance can cause coma and convulsions. Used in small amounts as a spice or cold tea, the herb should pose no problems.



The coastal zone encompasses a wealth of edible beach plants and marine algae.

Sea and Sandy Shores

Do not call us weeds. We are the flowers of the sea.

——E. L. AVELINE
THE MOTHER'S FABLES

Though incorrect botanically (technically, algae are neither flowers nor plants), I delight in the fabled concept of seaweeds as "sea flowers." They are intriguing organisms of infinite variability, complex in taxonomy, yet simple to adopt as food and "friend."

If I had to choose a habitat for being marooned, it would be the seashore. A "sea platter" of food — from sea vegetables (sea lettuce, ribbon kelp, and nori) and beach vegetables (beach greens, peas, and strawberries), to protein-bearing limpets, mussels, barnacles, and crabs would be mine for the gathering. Naturally, such a bountiful beach , with a bit of tropical warmth thrown in, would be perfect for playing Crusoe.

The habitat itself has a simple boundary—it forms where sea and shore intersect. Plants vary from algae such as bull kelp (covered by all tides) to beach greens and oysterleaf (common on sandy beaches) to glasswort, goosetongue, and arrow grass (common on tidal marshes). Notice that beach plants often have thick, fleshy leaves; these succulents withstand the salinity of their environment. They often have a salty taste, and provide a welcome spice to camping meals.

Desmarestia is an inedible alga high in sulfuric acid.

ALGAE:
ACID KELP (*Desmarestia* species)

OTHER NAMES: landlady's wig, sea sorrel, the color changer

Brown Algae (Division Phaeophyta)

Habitat and Range

D. ligulata is common in intertidal zones from Alaska to California. Species in our region are numerous and quite variable.

Acid Kelp: The "Dos" and "Don'ts" of Seaweed Harvesting

Of all the world's plants, the sea vegetables are the safest group to collect. You don't need to do spore tests or be wary of deadly look-alikes. Even if you do make an error in collection, all you're apt to end up with is an unappetizing meal. Most unappetizing would be acid kelp. This is a variable sea vegetable, often hairlike in appearance. It neither looks edible nor tastes it! *Desmarestia* is so high in sulfuric acid, in fact, that if you collect it you'll turn your other sea vegetable specimens into a gooey mass. (Acid kelp might possibly be of use in tanning furs.)

The only deadly seaweed reported in the world is *Lyngbya*, commonly called mermaid's hair. Since it favors warm tropical waters, northerners need not be concerned about this hairy, unappetizing genus. The Northwest, however, does have some coralline seaweeds that are extremely gritty; these too would not be tempting to devour. Following the advice of your palate is generally safe with the seaweeds; I know of none that taste good that could be hazardous. Harvesting only those you can positively identify is, of course, the best policy to follow.

Now that you're familiar with the don'ts, get acquainted with the many many dos of sea vegetable collection. Algae are an abundant vegetable source available on the nearest rocky beach.

Harvest Calendar

Late winter to early summer: entire plant except the holdfast. The minus ebb tides of spring are ideal; traditionalists prefer to harvest

at full-moon time. For food use, plants should be harvested fresh from the rocks; for garden use, beach drift may be collected after a storm. NOTE: For collection, you'll need rubber boots, a knife, and preferably a mesh collection bag. Cut the sea vegetables above their holdfasts so blades will regenerate.

Food Use

In southeast Alaska, the Tlingit traditionally eat dried sea vegetables as a snack; algae are often boiled with meat or fish as a main meal. The brown seaweeds, such as bull whip kelp, ribbon kelp, and bladderwrack, are often added to egg and tomato dishes and stir-fries. Full food use is detailed in the following sections about specific seaweeds.

Medicinal Use

In general, seaweeds contain ten percent to twenty percent protein and abundant trace minerals and iodine. Use of algae is often recommended to prevent goiter, treat anemia, and speed healing of fractures.

Historical Use

Laws regulating seaweed harvest are found in the earliest law records of Iceland. The Chinese *Book of Poetry*, believed to date from 700 B.C., describes use of marine algae.

Twelth-century Europeans used sea vegetables for human and livestock food, and to enrich soil. The famous Golden Belt of France is believed to have received its richness from the local use of marine fertilizer. Potatoes and tobacco also thrived in seaweed-composted gardens. In 1912, a liquid seaweed extract was patented in Britain.

Other

Research at Clemson University in South Carolina scientifically documents that foliar sprays of seaweed extract, diluted one part to one hundred parts water, promote vigorous plant growth and better insect and disease resistance. Other benefits include frost hardiness to twenty-nine degrees, longer storage life for harvested crops, and better germination of presoaked seeds. These remarkable benefits are attributed to the presence of alginic acids that bind trace elements and increase absorption by the plants, and to the cytokinin hormones of seaweeds. This liquid extract, however, should be applied in the recommended concentration and no more than three times during the season. Too high a concentration has an adverse effect.

The traditional way of applying seaweed is simply by spreading it on the soil. It may be rototilled in without composting as there is no danger, as with fresh animal manures, of "burning" the plants. It can also be used as a mulch. Friends who live on a houseboat prepare garden compost by combining kelp and salmon scraps from their fishnet. In Anchor Point, Alaska, a commercial greenhouse sells a potting mix blended from composted seaweed, peat, and fish waste.

According to a University of Alaska Cooperative Extension Service bulletin, 100 pounds of dry seaweeds contain 5 pounds potash, 1 pound phosphorus, and 1 1/2 pounds nitrogen.

Seaweed Specimens

12 sheets (12- x 18-inch) herbarium mounting board or heavy watercolor paper
1 artist's paintbrush
12 (12- x 18-inch) muslin or cotton cloths
24 (12- x 18-inch) blotters or absorbent paper
13 (12- x 18-inch) pieces of cardboard
2 (1/4-inch thick, 12- x 18-inch) masonite boards
2 straps

Slip a sheet of mounting board into the ocean under your seaweed specimen, then slowly lift it out of the water. Tilt gently to drain any excess water. If your specimen has fine hairs, spread them apart with a clean paintbrush. Cover your specimen with cloth and lay it between blotters. Sandwich the blotters between pieces of cardboard. Place other specimens on top in the same manner. Then press between two boards and tie securely with a strap. Make certain you note the date and place of collection and identification of each specimen. Change the cloth and blotters daily until your specimen is dry. Frame if desired. If small specimens are mounted on 3 1/2-by-5-inch mounting board, they serve as attractive postcards.

Seaweeds do not increase soil acidity. Ashes from burned seaweed can also be used in the garden as fertilizer for cabbage and potatoes.

Seaweeds are considered one of the undeveloped marine resources of Alaska. An Institute of Marine Science professor, C. Peter McRoy, in a June 1970 article in *Alaska Industry*, estimated the worth of this crop to be approximately $200 million. To date, the main commercial marine algal industry in Alaska is the herring roe kelp harvest. However, commercial applications for seaweed extracts such as algin, agar, and carrageenan are many. These act as stabilizers and thickeners and emulsifiers in products ranging from paper and paints to cosmetics and candy. "Every bowl of ice cream," says McRoy, "contains a little seaweed."

Physical Description

ACID KELP: *Desmarestia* species; *a.* 1 to 2 feet (or more) long; *b.* Extremely sour taste (from sulfuric acid). Some species change from brown to blue-green after being picked, hence the common name, "the color changer"; *c. Desmarestia* species are highly variable. They range from a single blade with no branches to broader blades with many branches to hairlike seaweeds with fine branches. Branching may be opposite or alternate. Tufts of brown hair fall off in midsummer, leaving small projections.

Botanically, seaweeds are primitive photosynthesizing plants that lack true leaves, stems, or roots. The rootlike holdfast serves only as an anchor to the ocean floor. Absorption of elements is not through the holdfast but rather through the algal tissues themselves.

Marine algae obtain nutritive elements directly from the ocean water, which compositionally is remarkably similar to human blood. Like blood and seawater, the algae themselves contain a balance of over one hundred trace elements. Eating sea vegetables provides our system with many hard to obtain nutrients.

Sea vegetables are often used as a dietary supplement for livestock animals. I noticed dramatic improvement in my horse's hooves and coat after adding one-quarter ounce ground kelp to his feed daily.

Sea vegetables are not affected by "red tides." However, harvesting should be avoided in areas polluted by industrial wastes and seepage. Algae are severely affected by oil spills. Judith Madlener, in *The Seavegetable Book*, says one quart of oil suffocates seaweeds in 100,000 gallons of sea water!

Children love collecting seaweeds. As the specimen dries (directions follow), the alga naturally glues itself to the mounting boards, making attractive prints and postcards. Besides being fun to make, seaweed cards have served as fund-raising activities for various groups.

Caution

Desmarestia species contain sulfuric acid and could cause digestive upset if consumed.

ALGAE:
BLADDERWRACK (*Fucus* species)

OTHER NAMES: wrack, paddy tang, rockweed, old man's firecrackers, popping weed

Brown Algae (Division Phaeophyta)

Habitat and Range

Bladderwrack is common on rocks in the middle to upper intertidal zone. Tides expose this alga to the air for long periods; it is quite tolerant of sunlight.

F. gardneri, formerly *F. distichus,* is common from the Bering Sea and Aleutian Islands southward to California. It has long, flattish, pointed tips.

F. spiralis ranges from the Aleutians to Washington; as its species name indicates, fronds are twisted or spiral.

Fucus: Soup Thickener and Slimming Tea

Fucus is one of the plants that, like the garden chrysanthemum, is commonly referred to by its botanical name. But it does have many nicknames, and these vary from bladderwrack and wrack to popping weed and old man's firecrackers. Call this alga what you will (rockweed is still another moniker), but do become acquainted with this easy to recognize and abundant sea vegetable. Some areas of Alaska have as much as forty pounds of *Fucus* per square yard of beach.

Harvest Calendar

Spring to early summer: inflated tips and tender ends of fronds.

Food Use

Inflated bladders of *Fucus* can be nibbled raw. Tips can also be stir-fried, simmered in soups and sphaghetti sauces as a thickening agent, or added to quiche and omelettes. Cook bladderwrack with clams and mussels to bolster flavor of the seafood. The sea vegetable can also be laid on campfire coals as a bed for barbecuing fish.

Since *Fucus* is alternately covered and uncovered with water, it can be rinsed before

Inflated bladders of *Fucus* feature in the alga's reproduction, releasing both male and female gametes. (Norma W. Dudiak)

Physical Description

BLADDERWRACK: *Fucus* species; *a.* Blades grow to 18 inches long; *b.* Inflated tips (receptacles) are filled with a mucilaginous substance. Depressions (conceptacles) in the inflated tips (receptacles) produce both male and female gametes; *c.* Fan-shaped frond (thallus) divides in twos (dichotomous branching); *d.* Midrib is prominent; *e.* Color: olive green when young, golden brown when past its prime; *f.* Small disklike holdfast.

using. Just dip briefly in cool to lukewarm (never hot) water. Use immediately or store in the refrigerator.

For long-term storage, dry spring-harvested *Fucus* rapidly in the sun. When brittle, store in an airtight container in a cool, dry place. I've found that drying bladderwrack slowly with artificial heat produces a poor-tasting product.

The sun-dried or fresh sea vegetable, steeped as tea, yields a broth reminiscent of chicken bouillon. It's excellent as a hot beverage and as the basis for a consommé or stew. When inclement weather extended an August seaside camping trip, *Fucus*-flavored soup, thickened with sulfur shelf fungi and salmon, provided a number of lunches for our group. Though *Fucus* is past its prime in late summer, it still can be used acceptably in this manner.

Medicinal Use

Herbalists recommend *Fucus* tea as a tonic for the lungs and as a thyroid-stimulating weight loss aid. I like to sip a cup of the accompanying *Fucus* blend fifteen minutes before meals.

In *A Modern Herbal,* Grieve says that a liniment made by bottling the mucilage from *Fucus* bladders in rum is used ". . . for strengthening the limbs of rickety children. Fucus liniment is also said to be soothing for rheumatic pain. According to Grieve, *Fucus* wine ". . . has been praised as a remedy in diseases of the hip and other joints and bones in children." Traditionally, the mucilaginous substance in *Fucus* bladders is rubbed on skin tumors and corns and rinsed off with salt water.

The California School of Herbal Studies recommends covering sore feet and ankles with warm *Fucus* and a towel. I like adding this seaweed to footbaths.

Historical Use

Scandinavians traditionally boiled bladderwrack in water and mixed it with grain for livestock; they also utilized the dry crumbled seaweed and seaweed ashes as nutritional supplements. In a French war experiment, says Grieve, horses fed ". . . the usual ration of oats and fodder gained eleven kilogrammes less in two months than a similar number fed on the same weight of seaweed. Another trial resulted in the cure of some sick horses fed on seaweed, while others fed on oats remained out of health." In Norway, says Tobben Spurkland of Anchorage, dried *Fucus* is still used in industry and in pet and dietary supplements.

Other

The British use potash-rich *Fucus* as fertilizer for potatoes and broccoli. Spreading it directly on fields as a mulch, and plowing under when desired, is the generally recommended procedure. Ashes of the burned seaweeds are commonly used as a garden supplement.

Botanically, algae are of ancient origin. A seaweed highly similar to *Fucus* was present some 400 million to 570 million years ago. To reproduce, *Fucus* bladders release eggs and sperm (male and female gametes) when waves splash against the inflated tips. "Because *Fucus* eggs can be obtained in large quantity," says J. Robert Waaland in *Common Seaweeds of the Pacific Coast,* "fertilized *Fucus* eggs have been favorite subjects of study by marine biologists interested in the process of development in marine organisms." Kids find bladderwrack receptacles fascinating for other reasons: when stepped on, they produce a mild firecracker "pop!"

Slim Sipping: A Tea for Reducing

1/2 cup dried bladderwrack bladders and fronds
1/2 cup dried chickweed
1/4 cup dried nettles
1/4 cup dried bedstraw
1/4 cup dry, chopped dandelion root

Blend ingredients and store in airtight container in dark closet. Steep 1 heaping teaspoon herb in 1 cup boiled water for 5 to 10 minutes.

NOTE: Except for bladderwrack, all of the above herbs should be dried in shade.

ALGAE:
BULL KELP (*Nereocystis luetkeana*)

OTHER NAMES: bull whip kelp, bulb kelp, giant kelp, sea kelp, horsetail kelp, sea otter's cabbage

Brown Algae (Division Phaeophyta)

Habitat and Range

Bull kelp ranges in the subtidal zone from Alaska to California. It commonly attaches to rocks in thirty to fifty feet of water (or more).

Bull Kelp: Pickle Possibility and Garden Aid

Of all the seaweeds in the world, bull kelp is the fastest growing. It expands from a microscopic spore into a massive plant measuring as much as two hundred feet long in only one year. It accomplishes this amazing feat by growing as much as two feet in a single day.

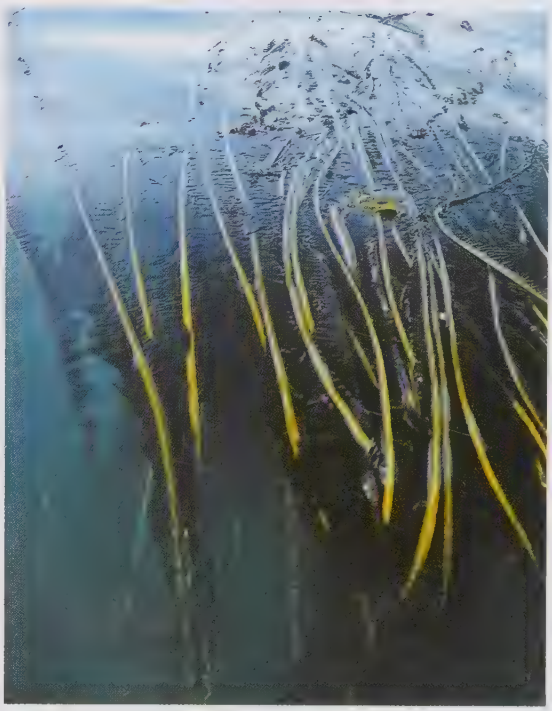
For northwestern foragers, bull kelp is probably the easiest sea vegetable to identify, but the most difficult to harvest. Growing in the subtidal zone, it is constantly covered by water. With a boat, however, the task becomes simple — just pull up a half dozen or so of these huge algae for your household needs.

Harvest Calendar

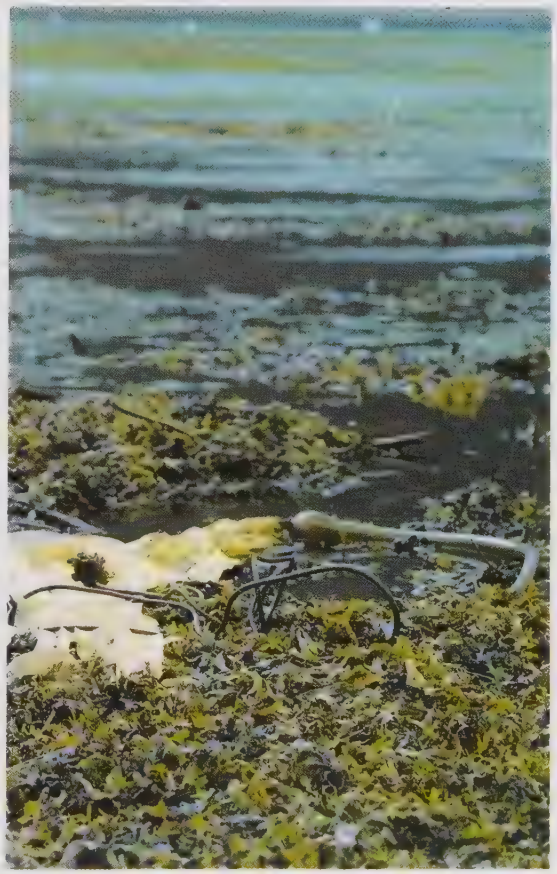
Spring to early summer: entire plant.

Fresh bull kelp can sometimes be found on beaches immediately after a storm, but it's definitely best to harvest kelp attached to the ocean floor for food use. Beach drift, however, is quite suitable for gardens.

NOTE: Harvesting methods vary from person to person. Some foragers rinse kelp in a vinegar-water solution, but wildcrafter Ryan Drum of Waldron Island, Washington, insists the plants should never be washed. Drum's theory is that since bull kelp is constantly immersed in salt water, removing it from the sea and exposing it to a fresh–water rinse sparks decomposition and results in a poorer product. For best results, kelp should be processed immediately or placed on drying racks in a shady, warm, well-ventilated area.



Tangles of kelp covering acres of water are common in the subtidal zone of the Pacific Northwest. (Norma W. Dudiak)



After a storm is the ideal time for picking kelp for garden use. For food use, kelp is best harvested by boat.

Pickling Solution

2 quarts vinegar
1 quart water
2/3 cup pickling salt
1/4 teaspoon dill weed
1 clove
1/4 teaspoon garlic salt

Combine ingredients. Heat to boiling. Pour over 1 quart peeled, brined kelp (prepared as below). Pour kelp into sterilized jars. Allow one week for kelp to become pickles.

Food Use

Kelp pickles are marketed commercially by Alaska Wild Berry Products. To prepare kelp for home-pickling, pare the kelp (with a potato peeler) to remove the thick skin. (NOTE: Some foragers prefer to use kelp with the skin intact rather than peeled.) Slice the hollow stem (stipe) and the bulb into 1/4- to 1/2-inch pieces. Make a salt brine by blending 1/4 cup salt and 1 cup water. Cover kelp with the brine and soak overnight. In the morning, rinse the kelp with fresh water and proceed with the pickling solution of your choice.

The Pickling Solution recipe is reprinted from the University of Alaska's Cooperative Extension Service.

For a quick and easy pickling blend, use leftover juice from commercial dill or sweet pickles.

Fresh, chopped stipes make a tasty and attractive pizza topping; diced and blended with bread crumbs and seasoning, they serve as fish stuffing. At the annual Seldovia, Alaska, Fourth of July celebration, salmon are wrapped in bull kelp blades and foil and barbecued. The kelp holds in moisture and adds flavor to the fish, besides serving as a vegetable.

I often dry bull kelp blades as snacks. Dry powdered blades serve as a nutritious table seasoning; blend with sea salt and dried garden and wild vegetables for your own special mix.

The kelp bulb can be stuffed with meatloaf and baked. Alaskan Marsha Million grinds kelp as a relish, and cans the sliced thin end of the stipe as mock "green beans."

Candied kelp is also popular. Dip the kelp in a honey or sugar syrup and then dry on a foil-lined cookie sheet in 200° F oven. Store in a jar in a dark cool place and serve as a chewy nutritious snack. The flavor reminds me of dried pineapple.

Medicinal Use

The Self-Heal Herbal Center of Victoria, British Columbia, recommends kelp for those with overactive thyroids. Kelp may be taken as a tea, capsule, or seasoning. Chewing dry kelp is a low-calorie snack high in all trace minerals.

Physical Description

BULL KELP: *Nereocystis luetkeana; a.* Can grow to 200 feet long; *b.* Floating, inflated bulb; *c.* Blades (fronds) are long and narrow; *d.* Long, hollow stipe gradually narrows as it approaches the holdfast; *e.* Branchlike hold fast attaches bull kelp to rocks on the sea floor far below low tide level.

D.C. Jarvis, M.D., in *Folk Medicine* says that studies indicate "the healing time of fractures could be reduced twenty percent by having the patient take kelp each day." Algin, a kelp extract, has been found success ful in lowering high blood pressure and alleviating heartburn.

Cosmetic Use

Add dry kelp to herbal baths; the powdered algae may be mixed with bath salts. The herb, however, is mainly used for beauty from "inside out." As a food supplement, it is said to promote smooth skin, shiny hair, and sturdy nails.

Historical Use

Kelp stipes, cut into thin strips and dried, were used by various native peoples as fishing lines. The bulbs were a traditional vessel for holding fish oil.

Other

Kelp extracts, such as the emulsified algin, are widely used in industry. Algin thickens ice cream and stabilizes salad dressing, hand lotion, and paint.

Kelp is sold as a nutritional supplement for horses and cattle. Coastal livestock owners can dry and grind kelp and add one-quarter ounce daily to each animal's grain. Kelp use promotes shiny coats and strong hooves.

The only part of bull kelp that I haven't found a recorded use for is the holdfast, but I suppose that too can be added to compost. One creative friend even uses bull kelp as a mold for candlemaking.

Caution

Some people report experiencing gas when using kelp in large quantities.

Fronds of dulse are handlike; dried, these "salty fingers" are a popular snack.

ALGAE:
DULSE (*Palmaria mollis,* formerly *Rhodymenia palmata*)

OTHER NAMES: dillisk, red kale, neptune's girdle, water leaf

Red Algae (Division Rhodophyta)

Habitat and Range

P. mollis ranges from the Aleutian Islands to California. This alga is common on rocks and other seaweeds in the intertidal zone (near the low tide mark).

Dulse: Soup Starter and Snack

Step into a natural foods store or one of those modern have-all supermarkets and chances are you'll happen upon cellophane packages of "dulse." The blackish-purple contents, available at a rather hefty price, are merely the dried version of what you can harvest free on many Pacific Northwest beaches.

In its natural state, dulse is a pale to vivid reddish-purple sea vegetable that thrives in the intertidal zone, attached to rocks and shells and even other seaweeds. Drying, which alters both color and texture, readies this plant for long-term storage and use in many recipes.

Harvest Calendar

Early spring to early summer: dulse fronds. May to June is traditional harvest time in southeast Alaska.

NOTE: To collect dulse for food, snip the fronds an inch or so above the holdfast. Pick clean of shells and ocean creatures. Some foragers rinse dulse in fresh water before drying, but many gatherers believe that rinsing in ocean water results in less deterioration of the dulse and better nutrient retention. Traditionally, dulse is spread on beach rocks on a sunny day to dry. If the process is incomplete by evening, dulse should be taken indoors to avoid absorption of the morning dew. I like hanging dulse on clotheslines, when available, or laying on screened drying racks in a hot sunny greenhouse for the drying process.

Store in an airtight container when drying is complete.

Food Use

In spring, I thoroughly enjoy snacking on raw dulse when hiking the shores of Kachemak Bay, Alaska. Dulse, fresh from the beach, has a rubbery texture and a flavor that appropriately reminds me of the ocean.

If you harvest dulse with herring eggs present, sauté in butter and spike with lemon juice and pepper; this is considered quite a gourmet treat. Fresh young dulse can also be stir-fried or added to soups.

The more you eat dulse, the more your body tends to crave its flavor. Kathi Keville of California calls dulse the "beef jerky of the sea." The dried product does indeed make a chewy jerkylike snack. My father greatly enjoys this "sea jerky."

The Maine Coast Sea Vegetable Company recommends DLT's, dulse-lettuce-tomato sandwiches; dulse and cream cheese bagels are also delicious. I recommend rice cakes topped with cottage cheese and dulse bits as breakfast, lunch, or snack.

Jeanne Culbertson of Adak, Alaska, suggests adding shredded dried dulse to hot butter and tossing with popcorn. Dulse-stuffed clams and crab boiled with dulse are other delicacies. In addition, you can add dulse to soups, omelettes, and wild food casseroles; the recipe for Camping Classic is my standby for seaside camping excursions.

Nutritionally, dulse is rich in protein, calcium, phosphorus, potassium, magnesium, trace minerals, and vitamins A and B. An average serving supplies more than half the daily requirement for iron.

Dulse is a low-calorie, high-nutrition substitute for potato chips. To prepare, just place a thin layer of oil (toasted sesame is my favorite) in a skillet and stir-fry the dry seaweed until crisp; be careful not to burn the dulse as it toasts rapidly. For "chewy chips," place the dry dulse in a 200°F oven and roast for 5 to 10 minutes. For "dulse nachos," serve chewy chips drizzled with cheese.

Sugpiaq Eskimos boil dulse with fish. If you want to make a traditional Alaskan soup, boil dulse with salmon heads; this makes a rich, flavorful stock. After discarding any objectionable parts (skin, bones, etc.), add any vegetables you desire. For chowder, add milk; the richness of the stock makes cream unnecessary.

Dulse chips are a favorite in British pubs. Dulse and potatoes are a staple for the Irish, who also favor this sea vegetable boiled in milk. In Siberia, dulse is the basis of an alcoholic beverage.

Medicinal Use

Herbalists highly recommend dulse tea for menstruating and lactating women. Convalescents and anemics are often prescribed a tea blended of dulse, nettles, dandelion roots, yellow dock, and dried leafy green vegetables. This is an excellent brew for fortifying the body for winter.

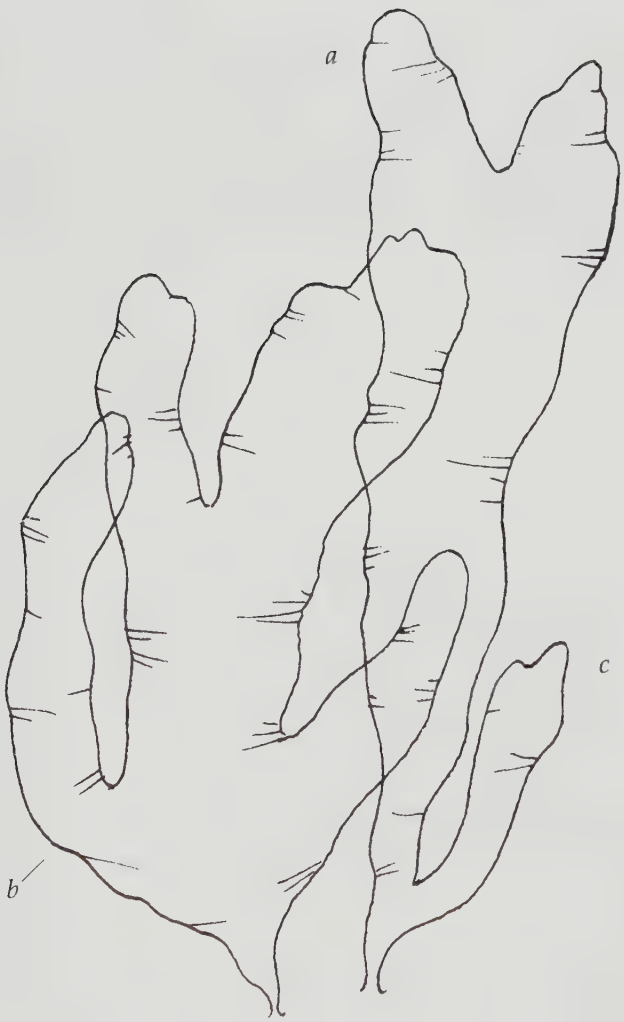
The Canadian herbalist Don Ollsin also recommends use of dulse for those with an underactive thyroid.

Camping Classic

2 cups water
1/2 cup fresh or dry shredded dulse
1 package ramen noodles
1/2 cup shredded fresh greens
1/4 cup grated Mozzarella cheese

Bring water to a boil. Add shredded dulse, ramen noodles, and shredded greens. Cook until ramen noodles are tender (about 5 minutes); add ramen flavor packet. Top with cheese. Serves 2.

NOTE: I've made this dish with both garden and wild plants and it's always popular. Good domestic greens to add are green onions, shredded carrots, leeks, and spinach. When beach camping try this with goosetongue, oysterleaf, and beach greens. The recipe is highly adaptable to your situation. For additional servings, just add extra packages of ramen; the noodles are lightweight and low-cost and cook quickly in a minimum of water, making them ideal for the trail.



Physical Description
DULSE: *Palmaria mollis; a.* Fronds 4 to 12 inches long; *b.* Leaflike, translucent blades may be deeply cleft and fingerlike. Blades are light purple, become deep reddish-purple when dried; *c.* Rubbery texture when raw.

For colds, I find dulse tea blended with honey, ginger, and cayenne pepper helpful. When spending winter in the bush, I felt a marked drop in vitality when my sea vegetable supply dwindled. Sea vegetables, dulse included, are said to contain every trace mineral known, in the same concentration as human blood.

Dried dulse is an excellent vitamin and mineral supplement for both children and adults; ingest as a food snack, tonic tea, or powdered seasoning.

Cosmetic Use

Dulse is said to promote the growth of the hair and fingernails. Adding dulse to the daily diet helps promote beauty from the "inside out."

Add dulse to baths to promote release of toxins from the body; use as a detoxifier after X-rays. I find a hot dulse bath regenerative after air travel. Dulse can also be used in facial steams for oily skin.

Historical Use

Ashes of dulse and other seaweeds have served as a salt substitute in cheese-making. Rolled dulse, pressed into plugs, was chewing "tobacco."

Other

Botanically, dulse is classified as a red alga. It obtains its reddish-purple hue from the pigment, phycoerythrin, which masks the green chlorophyll color.

ALGAE:
NORI (*Porphyra* species)

OTHER NAMES: laver, purple laver, red laver, thalkush

Red Algae (Division Rhodophyta)

Habitat and Range

P. perforata, *P. miniata*, and *P. variegata* range from Alaska to California. Numerous *Porphyra* species of local distribution also occur. These algae commonly attach to rocks in the middle to upper intertidal zone.

Nori: Japanese Delicacy Gaining American Appreciation

According to the customs of Wales, nori is best dipped in oatmeal, fried in a skillet, and served for breakfast! Even if you can't quite wake up to seaweed, you might be a fan of the dining delicacy known as "sushi," which consists of vinegared rice wrapped in nori sheets. The Japanese have long savored the virtues of algae; Americans are now starting to appreciate the flavor and nutrition of the sea-grown vegetables.

Harvest Calendar

Early spring to summer: everything except the holdfast. Rinse well in salt water to remove sand and gritty particles. Fresh nori may be stored refrigerated for a day or two.

Food Use

Fresh nori can be finely chopped and added to salads and soups. Texture and taste, however, improve markedly with drying. The University of Alaska Cooperative Extension Service recommends drying nori in the sun, a warm room, or in a slow oven (150°F) for 10 to 20 minutes. Jill Thorington of Sitka, Alaska, reports *Porphyra* difficult to dry in rainy Southeast. She says that locals have a novel drying method — they sew nori into a pillowcase and place it in laundry driers on air setting! (On sunny days, they lay it outside on bed sheets.)

Dry nori can be broken into pieces as desired or ground into flour in a blender. At dinner parties, guests can toast dry nori

When in the ocean, nori looks purplish. Dried, it turns nearly black.

pieces over a flame. Add crumbled nori to baked stuffed potatoes, omelettes, quiche, casseroles, rice dishes, soups, and salads. Use nori powder as a seasoning and in pie crusts. For a healthful and delicious snack chip, place dry nori in a 200°F oven until crisp.

When camping, cook clams or crabs with nori; this method flavors the seafood and provides a vegetable side dish. In southeast Alaska, Tlingits often cook nori with fish. In Seldovia, Alaska, Lilian Elvsaas picks nori from beach rocks on sunny days when the seaweed is partially dry. She rolls the nori, stores it in the refrigerator, and eats it as a snack or cooked with fish or rice.

The Irish favor nori served with potatoes and butter. My favorite nori dishes are sushi (nori sheets are often sold in natural foods stores for making this Japanese specialty) and Navarro Oysters. This mock oyster recipe was originated by Eleanor Lewallen and is reprinted from the *Sea Vegetable Gourmet Cookbook and Forager's Guide.* (The booklet, which features additional sea vegetable recipes is available for $3.95 through the Mendocino Sea Vegetable Company, P.O. Box 373, Navarro, California 95463.)

Medicinal Use

Like other sea vegetables, nori is rich in vitamins, minerals, and trace elements. It has been used in the treatment of goiter and throat ailments. Sailors often ate nori to ward off scurvy.

Historical Use

Nori has been farmed in Tokyo since the 1700s. In *Common Seaweeds of the Pacific Coast,* Waaland reports that "the basic technique involved placing additional substrates at depths where *Porphyra* normally grew. Today, the cumbersome brushwood substrates have been

Physical Description

NORI: *Porphyra* species; *a.* To about 1 foot; *b.* Single blade attaches by small holdfast to rocks. Blade varies with species from 3 to 12 inches in width. Edges are wavy or ruffled; *c.* Blades are transparent and very thin. Underwater, nori looks reddish or grayish purple. It turns blackish when dried.

replaced by systems of nets that are rigged so they will be out of the water for four to four and one-half hours when the tide is low."

Other

Porphyra has two phases in its life cycle. One form is the bladelike portion we commonly see on area beaches. The other is filamentous and inconspicuous.

The blades that are harvested are normally one cell thick. As summer progresses, nori thickens noticeably. Bradford Angier, in *Field Guide to Edible Wild Plants*, says this is caused by the "... swelling of the jelly that surrounds the sexual bodies at the time of ripening."

Weight watchers will be happy to know that a 100-gram serving of nori contains only 280 calories. This one serving supplies one-third the daily requirement of protein and vitamin C, more than half the required iron and niacin, all the vitamin A, and double the riboflavin.

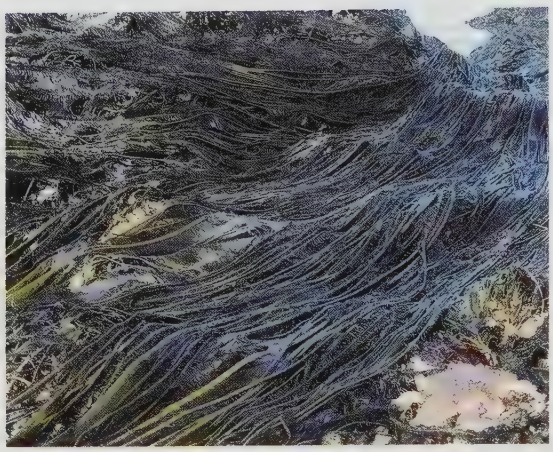
Caution

An excess of nori is said to cause gas and minor stomach upset.

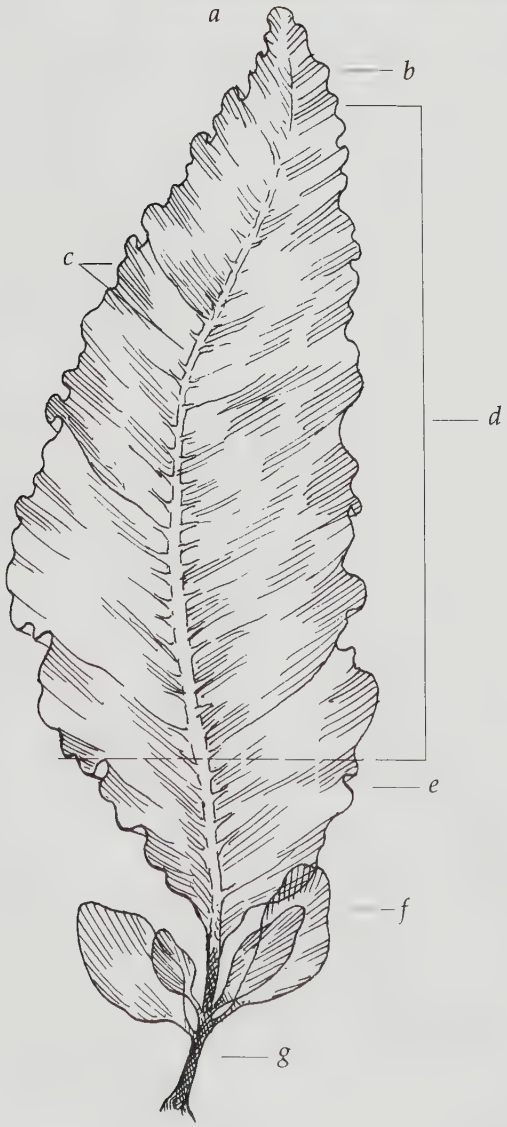
Navarro Oysters

1/4 cup whole wheat flour
1/4 teaspoon baking soda
1/2 cup milk
1 egg (optional)
1 to 2 tablespoons soy sauce (to taste)
Hot sauce (to taste)
1 cup dried nori
1 onion, diced
2/3 cup safflower oil or cooking oil

Combine flour and baking soda, add milk and egg (egg can be omitted if desired); add soy sauce and hot sauce. Mix this batter. Break nori into small pieces and stir the pieces into the batter. The nori will absorb moisture in the batter as you add the onion. This is basically a thin pancake batter; but as nori absorbs moisture and flavor, the mixture becomes a gooey mass. Fear not. To fry, pick out small amounts with chopsticks, fork, or fingers, and deep-fry 2 or 3 at a time in hot oil until golden brown and crisp on both sides. Remove with chopsticks or forks, drain, and serve immediately as an appetizer (serves 8) or as a main dish with rice (serves 4).



Ribbon kelp is available in great abundance on many rocky Pacific Northwest beaches.



ALGAE:
RIBBON KELP (*Alaria* species)

OTHER NAMES: *wakame*, wing kelp, tangle, honeyware, murlins, henware, badderlocks

Brown Algae (Division Phaeophyta)

Habitat and Range

A. marginata ranges from the Gulf of Alaska to California. Other Pacific Northwest species include *A. crispa*, *A. nana*, *A. taeniata*, and *A. praelonga*. All can be found attached to rocks in the intertidal zone.

Ribbon Kelp: Many Names, Many Uses

Wakame is the Japanese name for ribbon kelp, and the name you're apt to see this seaweed marketed under in natural foods stores. *Alaria*, its botanical name, translates as "winged" and refers to the winglike reproductive blades located between the holdfast and the main blade. Wing kelp, henware, badderlocks, tangle, and murlin are all monikers for this versatile sea vegetable that's well worth incorporating into your cuisine.

Harvest Calendar

Late winter to early summer: clip the seaweed above the tonguelike leaflets (sporophylls) located near the holdfast. If harvested in this manner, the sea vegetable will continue producing new blade growth. Blades have been reported to grow over 12 inches within 24 hours.

Food Use

I like snacking on ribbon kelp's center midrib and adding it to stir-fries for a crisp texture. The leafy blades and midribs are tender and excellent fresh; rinse and store refrigerated if unable to use immediately. Dry the blades well for year-round use.

Physical Description

RIBBON KELP: *Alaria* species; *a*. To 10 feet long; *b*. Top portion often tattered and not usable; *c*. Blades olive-green with crisp center midrib; *d*. Edible portion; *e*. Clip here, above reproductive portion; *f*. Reproductive blades (sporophylls); *g*. Holdfast.

Alaria chunks are good in quiche, and on pizza. Try them sautéed with gingerroot and garlic, stir-fried with cabbage, steamed with rice, and added to soups with miso. Lee Clendenen, China Poot Bay Society volunteer, says ribbon kelp ". . . has a nutty flavor enhanced by sautéing in bacon grease."

Jeanne Culbertson of Adak, Alaska, recommends sliced ribbon kelp, noodles, and sausage as ". . . a hearty lunch after a trip to the beach."

Dried ground *Alaria* is a mineral-rich table seasoning; the powdered product is sometimes added to flour to increase nutritional content of breads and baked desserts. Ribbon kelp is nearly one-quarter protein. It also contains significant amounts of iron, magnesium, phosphorus, potassium, calcium, sulfur, sodium, and B vitamins.

The sporophylls are considered a delicacy raw or cooked. However, since the plant reproduces through this portion, they should be harvested on occasion only. To collect, snip a few sporophylls from various plants, leaving the holdfast intact and enough sporophylls so the plant can regenerate.

Seaweed Italiano

Contributed by Jeanne Culbertson of Adak, Alaska

32 ounces (four 8-ounce cans) tomato sauce
1/2 clove garlic, minced
1 tablespoon Worcestershire sauce
1/2 teaspoon oregano
1 cup water
4 cups chopped *Alaria*
1/2 cup grated Parmesan cheese

Combine all ingredients. Simmer 1 hour. Add water if it is too thick. Serve as usual with spaghetti and meatballs, or add browned meat to the sauce. Serves 4.

NOTE: This recipe is also nice with wild mushrooms, clams, or mussels in place of the meat.

Medicinal Use

Alaria tea has been recommended as a tonic to cleanse and tone the body organs. Its high iodine content makes it useful to prevent goiter. It is sometimes blended with chickweed as a weight loss tea.

Though at one time it was believed man couldn't assimilate the carbohydrates present in sea vegetables, it's now theorized that satisfactory absorption occurs after seaweeds have been included in the diet for a week. Physicians are currently conducting studies investigating the relationship between high seaweed ingestion and low incidence of heart disease. Various sources claim that the algin contained in ribbon kelp removes radioactive strontium from the bodies of mammals and prevents radiation sickness.

Cosmetic Use

Eating ribbon kelp (and other sea vegetables) promotes growth of hair and nails. A clear and lovely complexion is another reported benefit.

Other

Ribbon kelp was traditionally harvested commercially by divers. Today the vegetable is commonly cultivated on bamboo rafts.

Sea lettuce resembles green cellophane.

ALGAE:
SEA LETTUCE (*Ulva* species)

OTHER NAMES: water lettuce, green laver

Green Algae (Division Chlorophyta)

Habitat and Range

In the upper intertidal zone, sea lettuce grows on rocks and other algae; it is also found in lower intertidal zone in quiet bays. Bits of sea lettuce are often found freefloating on mud flats and lagoons.

Ulva lactuca is common from the Bering Sea and Aleutians to South America.

U. fenestratra, which ranges from Cook Inlet, Alaska, to Oregon, has green fronds with fenestrations (i.e., openings or perforations) in the leaflike thallus.

U. rigida, which ranges from Norton Sound, Alaska, to Mexico, has a firmer, more rigid thallus.

(NOTE: *Ulva* species all have two layers of cells. *Monostroma* is a one-celled green seaweed that can be used interchangeably with sea lettuce.)

Sea Lettuce: Salad and Seasoning

As the species name *lactuca* indicates, the *Ulvas* are the "lettuce" of the sea vegetable world. They are most tender early in spring, becoming tougher and tougher as the season progresses. For year-round use, gather sea lettuce in spring and dry a quantity. The dry powdered "lettuce," to me, yields the tastiest of the seaweed seasonings.

Physical Description

SEA LETTUCE: *Ulva* species; *a*. Leaflike blade (called thallus) grows to 24 inches long in some species. Edge of thallus may be ruffled. Blades may be solid or with holes; *b*. Thin, cellophanelike sheets are 2 cells thick. Color: bright green; *c*. Small holdfast anchors plants; sometimes sea lettuce breaks off with rough wave action and is found floating in coves and mud flats.

Harvest Calendar

Early spring to early summer: leaflike blades. Gather only when bright green in color; when past their prime, the blades become whitish.

Food Use

Sea lettuce should be rinsed in cool saltwater to eliminate sand and grit. Young tender fronds may be chopped and added to salads and soups. To prepare sea lettuce as a potherb, *Edible? Incredible!* recommends dropping *Ulva* in boiling water for two minutes and serve with butter, seasoning, or vinegar.

Dry sea lettuce is a good-tasting seasoning for chowders, salads, eggs, and casseroles. It can be powdered and used in shakers to add a salty taste; besides flavor it adds a healthy dose of protein, iron, vitamins, and trace minerals to the diet. The accompanying blend is a nutritious multipurpose table seasoning. I use it in place of salt and pepper.

Medicinal Use

To relieve the discomfort of sunburn, some herbalists recommend applying fresh sea lettuce leaves. Those tempted to conduct a personal field test can retreat to the beaches of southern California and Mexico, where both sea lettuce and sun are in abundance.

Other

Botanically, the *Ulva* genus contains the largest green algae. The presence of two layers of cells differentiates *Ulva* from the one-layered *Monostroma*.

Land and Sea-soning

1/2 cup dried sea lettuce
1/2 cup dried lovage
1/4 cup dried bull kelp blades
1/4 cup dried nettles
1/4 cup dried dulse
1/4 cup dried sorrel
1/4 cup dried sweet gale leaves
1/4 cup dried chives

Mix all ingredients well, then grind in coffee mill or herb grinder. Place in shaker and use as seasoning for daily meals as well as for cooking.

NOTE: The volume of herbs reduces dramatically through grinding. Makes approximately 1 cup seasoning.

"When *Ulva* becomes fertile," says J. Robert Waaland in *Common Seaweeds of the Pacific Coast*, "contents of all the cells at the edge of a blade will be converted to small swimming reproductive cells. These cells may form a pale green cloud if gamete or spore release occurs in a still, undisturbed tide pool. When the contents of all the reproductive cells have been released, the margin of the blade will appear white."

The loss of color also indicates the passing of the sea lettuce season. But, with a little advance planning, you'll be able to enjoy your dried supply every month of the year!

Leaves of arrow grass *(left)* contain hydrocyanic acid. They are sometimes mistaken for the edible leaves of goosetongue *(right)*.

Close-up of flowers of arrow grass.

ARROW GRASS (*Triglochin* species)

OTHER NAMES: beach arrow grass, seaside arrow grass, sourgrass, goosegrass (*T. maritimum*); marsh arrow grass, small arrow grass (*T. palustris*)

Arrow Grass Family (Juncaginaceae)

Habitat and Range

As its species name indicates, *T. maritimum* is a maritime plant, common coastally from Alaska to California. It also inhabits inland marshes and wet meadows.

T. palustris (*palustris* means "marsh-loving") favors fresh or brackish water. It is common from western and northern Alaska and the southern Yukon to California.

Both species contain hydrocyanic acid, a poison most concentrated in the green leaves. The compound is likely to occur in other Pacific Northwest arrow grasses such as *T. concinna* (ranging from British Columbia to California) and *T. striata* (a California species).

Arrow Grass: Coffee Substitute and Cattle Killer

In the world of cultivated plants, we commonly encounter plants with poisonous parts. We don't hesitate to eat rhubarb stalks even though the leaves are deadly. We relish tomatoes but wouldn't dare eat the greenery. Yet in the world of wildlings, the mention of toxins often sends us scurrying back to the "safety" of the garden.

Arrow grass, like rhubarb and tomatoes, is edible IF you harvest the proper portion. But if you're careless and chow down on the leaves that are high in hydrocyanic acid, you may take a hasty ambulance ride to the nearest hospital!

Harvest Calendar

Spring: the white base of the young leaves. Do NOT eat the green leafy parts.

Late summer: seeds. Parch or roast before eating.

Food Use

The light-colored base of the spring leaves is reportedly a safe and sweet edible. This is

commonly eaten by coastal British Columbia natives; the Haida can it for winter use.

"The seeds," says Donald Kirk in *Wild Edible Plants of Western North America*, "were parched and ground into flour by several Western Indian groups. When roasted, the seeds were used by early western pioneers as a substitute for coffee."

The green leaves, however, are toxic. (See Caution, following). The safe whitish leaf base can be added to salads and soups or used in the Beach Medley recipe.

Other

Despite its "grass" name, arrow grass is not related to the large and complex family of grasses (Gramineae). Instead, it belongs to the arrow grass family (Juncaginaceae), a rather primitive family (by evolutionary standards) encompassing four genera of marsh and aquatic herbs.

Triglochin has some fifteen species worldwide; these range from Arctic waters to brackish marshes of Africa and Australia. According to *Hortus Third*, the plants are "sometimes grown in bog gardens and aquaria."

Caution

Arrow grass leaves contain hydrocyanic acid, a toxin that interferes with the cellular uptake of oxygen. Symptoms of cyanide poisoning include headache, heart palpitations, dizziness, and convulsions. Immediate medical assistance should be sought.

First-aid treatment in the field includes inducing vomiting and administering artificial respiration. (See Treatment of Acute Poisoning in the back of the book.)

Hospital treatment of cyanide poisoning includes use of a cyanide antidote kit and administration of oxygen. "Prompt and continuous hyperventilation with oxygen," says editor Wade in *Martindale, The Extra Pharmacopoeia*, is considered the prime factor in the successful treatment of cyanide poisoning.

Sheep and cattle have died from grazing arrow grass and eating hay containing large amounts of the dried herb. Muenscher, in *Poisonous Plants of the United States*, says

Beach Medley

3 cups fresh shrimp
Boiling water
2 tablespoons sliced arrow grass leaf bases (white portion only!)
2 tablespoons oil
4 cups chopped goosetongue leaves
1/2 cup chopped beach green leaves
3 tablespoons chopped lovage leaves
3 tablespoons soy sauce
3 cups cooked noodles

Add fresh shrimp to rapidly boiling water. As soon as the water returns to a boil, promptly remove shrimp. Peel shrimp and set aside. Sauté arrow grass bases in oil. Add remaining ingredients and cook until tender but not mushy. Add shrimp and soy sauce. Serve on hot noodles. Serves 2 to 3.

that "the toxic dose must be eaten at one time; the poison is not cumulative."

The greatest danger to foragers is in mistaking beach arrow grass leaves for goosetongue. Note that arrow grass leaves are flat on one side and round on the other, with grasslike sheaths at the base. Goosetongue leaves have prominent ribs and have a flattened to V-shaped cross-section.

Though green arrow grass leaves are toxic, the white leaf bases and parched or roasted seeds are reportedly safe.

Physical Description
ARROW GRASS: *Triglochin* species; *a*. *T. maritimum* has leaves 1 to 2 feet long; fruiting stems to $2^1/_2$ feet. *T. palustris* is a small species with leaves about $^1/_2$ foot and stems to about 1 foot; *b*. Flowering stem (scape) is short when in flower, elongates when in fruit; *c*. Small greenish flowers; *d*. Leaves are round on one side, flat on the other (semicylindrical); *e*. Seeds of *T. maritimum* are oval with 6 divisions; those of *T. palustris* are narrow with 3 divisions. Seeds have pronounced ridges; *f*. Leaves with grasslike sheath at base; *g*. Green leaves are poisonous and contain cyanide.

BEACH GREENS (*Honckenya peploides*, also known as *Arenaria peploides*)

OTHER NAMES: sea chickweed, seabeach sandwort, sea purslane

Pink Family (Carophyllaceae)

Habitat and Range

Honckenya peploides, which some botanists and edible guides refer to as *Arenaria peploides*, is a common beach green ranging coastally from the extreme Arctic to the outer reaches of the Aleutian Islands southward to coastal Oregon.

Beach Greens: Scurvy-Fighter and Salad-Brightener

Beach greens were one of the plants best loved by sailors exploring foreign shores. Called scurvy grass for its ability to cure and prevent that dreaded vitamin C deficiency disease, this green was a familiar sight on both eastern and western shores. Oregon explorers could find this food source northward to Point Barrow and beyond. Virginians could feast on the common greens to Greenland and the circumpolar lands. The dense mats of bright greens are still valued as staples in Arctic villages, and in my life they offer a nutritious, delicious boost to meals on coastal camping trips.

Harvest Calendar

Late spring to early summer: leaves and shoots.

Summer: leaves. (The plant is considered prime before flowering but is often gathered into August).

Late summer: seeds.

Food Use

Since beach greens thrive on sandy beaches, wash the plants well to remove gritty particles. Then add leaves and young shoots to tossed salads.

Try beach greens steamed lightly (just two to three minutes is sufficient) and tossed with garlic butter. Stir-fry greens in Chinese dishes and simmer them in soups. Don't forget to try pickled beach greens. Beach greens are also a good ingredient in salad spreads for beach picnics.

Beach greens are at their prime in spring to early summer.

Use of beach greens is still common throughout coastal Alaskan villages. Mamie Beaver of Kotzebue says she ferments cooked beach greens in a cool place; the Inupiat call this dish *Atchaaqluun*. Grace Johnson of Nome adds cooked berries to the fermenting mixture. I like blending beach greens with cabbage when making sauerkraut.

With a little advance planning, spring-prime beach greens can be enjoyed year-round. Just collect a quantity before the plants flower, wash well, blanch one minute, and freeze in plastic bags. Besides being tasty (some writers liken the flavor to cabbage and watercress), they're extremely high in vitamin A as well as the scurvy-fighting C.

Another beach greens food, though tedious to collect, are the seeds. They can be ground and used to extend flour supplies, or sprinkled as a garnish on various foods.

Other

Beach greens are relished by wild ponies in the Canadian maritime provinces. On Alaskan shores, I've found evidence of brown bears grazing both goosetongue and beach greens.

Honckenya, the genus name, honors the eighteenth-century German botanist Gerhard

Seaside Sandwiches

2 cups fresh beach green shoots (well-washed and chopped)
3 cups cooked, cleaned shrimp
2 tablespoons finely chopped lovage leaves
1 cup mayonnaise
Salt and pepper to taste
8 slices bread

Mix all ingredients well; spread on bread and enjoy. Serves 4.

Honckeny. The species name, *peploides*, is Greek for a peplis or cloak. Acting like a cloak, beach green leaves, says Dr. Lewis Clark in *Wild Flowers of the Pacific Northwest*, "... wrap round and almost hide the insignificant greenish flowers."

Though the flowers may be inconspicuous, the plants aren't. Just visit a Pacific Northwest beach for a summer picnic and become acquainted with the bright, dense mats of this explorer's favorite.

Physical Description
BEACH GREENS: *Honckenya peploides; a.* Stems grow to 2 feet long; *b.* Flowers are small and greenish-white. They may be scattered in upper leaf axils or arranged in clusters called cymes; *c.* Bright yellow-green leaves are in opposite arrangement; *d.* Leaves and stems are smooth and fleshy (subspecies *major* is somewhat coarser); *e.* Globular seed capsules develop in mid to late summer; *f.* Stem branches freely.

BEACH PEA (*Lathyrus maritimus* also known as *Lathyrus japonicus)*

OTHER NAMES: purple beach pea, seaside pea, raven's canoe

Pea Family (Leguminosae)

Habitat and Range

The range of beach pea, *L. maritimus*, extends from the ocean shores of the Arctic Ocean to those of California. Numerous other *Lathyrus* species of questionable edibility extend from Alaska to California. Positive species identity is crucial. (See Caution.)

Beach Pea: Exciting Edible

Beach pea's botanical name, *Lathyrus*, is derived from the Greek *la thoursos*, meaning something exciting. These plants, which look like miniature garden peas, are exciting to discover on seaside camping trips. But before you get too carried away with your collecting, become familiar with the dos and don'ts of pea harvesting.

Young, bright green beach pea pods are a tasty vegetable. When the pods turn brown or red, peas are too old to harvest. (See Caution.)

Harvest Calendar

Spring: young shoots (under ten inches high).

Summer: whole pods when young. Shelled peas from mature pods.

Food Use

In *Earth Medicine, Earth Foods*, Weiner reports that "the Iroquois ate the sprouts and stalks of young beach pea plants, which were less than 10 inches high, as greens." The Chinese also traditionally used beach pea greens as a potherb. I, too, enjoy collecting spring shoots and sautéing them with other vegetables. After they have flowered, I use the tender young pods (like snow peas) in Seaside Stir-fry.

Shelled peas are a sweet beach nibble; the steamed peas are a delightful vegetable side dish. Nutritionally, they are high in protein and vitamins A and B.

Medicinal Use

In *Chinese Medicinal Herbs*, Li Shih-chen writes that *L. maritimus*, used as a potherb, is very nourishing to the intestinal tract and toning for the urinary organs.

Other

There are more than one hundred *Lathyrus* species scattered throughout the North Temperate Zone. Several species are cultivated overseas for animal fodder or for edible peas; some are grown as ornamentals.

Fielder's Herbal Helper for Hunters, Trappers, and Fishermen reports that *L. palustris*, commonly called vetchling or marsh peavine, was used by American Indians for fattening and conditioning horses. To date, I have not found any documentation regarding safety of this species for human food.

Caution

The pea family is large and somewhat confusing; before you eat any wild peas, make certain you are positive of identity. Some *Lathyrus* species contain cumulative toxins. During times of famine, when wild peas have

Seaside Stir-fry

1/4 cup beach peas (young greens or whole immature pods)
1/4 cup beach greens
1/2 cup goosetongue leaves
1 cup oysterleaf leaves
3 tablespoons lovage leaves
Oil for stir-frying
1 cup cooked, cleaned crabmeat
Grated Parmesan cheese
2 cups cooked rice or noodles

Coarsely chop all greens. Stir-fry vegetables in oil until tender. Add crabmeat and stir constantly until crab is heated through. Sprinkle with Parmesan cheese. Serve on hot rice or noodles. Serves 2.

been eaten as the sole food source for two to four weeks, outbreaks of lathyrism (a condition characterized by partial or total irreversible paralysis) have occurred.

Though *L. maritimus* (called *L. japonicus* by many botanists) is listed as "perfectly safe," I do not recommend the plant as a survival food. Even common garden peas, says Donald Kirk in *Wild Edible Plants of Western North America*, ". . . can cause nervous disorders if eaten in great quantities over long periods of time." Eat both wild and domestic peas in moderation only.

Physical Description
BEACH PEA: *Lathyrus maritimus; a.* Grows 1 to 2 feet high; *b.* Beach pea has a typical pea flower: the banner is reddish and wings and keel are bluish-purple; *c.* Curling tendrils at end of stem; *d.* Leaves are smooth to sparsely pubescent for subspecies *maritimus*; subspecies *pubescens* has more short hairs; *e.* Pods are smooth, unjointed, to 2 1/2 inches long; they look like miniature garden peas; *f. L. maritimus* has large modified leaves (stipules), which are arrowhead-shaped to broadly egg-shaped. (Important: stipules are LACKING in *L. palustris*, a species of unknown edibility.)

GLASSWORT (*Salicornia* species)

OTHER NAMES: beach asparagus, pickle plant, saltwort, samphire, chicken claws, pigeonfoot

Goosefoot Family (Chenopodiaceae)

Habitat and Range

Saline and alkaline soil, seashores, and salt marshes are prime habitats for glasswort.

S. europaea is an annual species that occurs sporadically from Cook Inlet, Alaska, southward to California.

S. virginica (also known as *S. pacifica*) is a perennial that grows from a creeping rootstock. It is fairly common on beaches from the Alaskan Panhandle southward to California.

S. rubra is a red glasswort occurring in alkaline areas from southern British Columbia to eastern Washington.

Other *Salicornia* species of interest include *S. subterminalis*, *S. utahensis*, and *S. Bigelovii* (all found in California).

Glasswort: The Pickle Plant

When I think of glasswort, a memory of Christmas brunch (glasswort omelette and champagne) in Key West, Florida, springs to mind. This succulent, a beach lover, favors both North American coasts, as well as those of Europe and Africa. It's one of the plants that makes me feel at home wherever I roam.

Harvest Calendar

Spring through early fall: above-ground portion. (NOTE: Later in the season, gather only the tender stems.)

Food Use

Glasswort is famous as a pickle. To prepare, boil 3 cups vinegar with 1/2 cup honey and pickling spices. Intermix glasswort with onion and lemon slices in sterile jars. Cover with hot vinegar mixture and seal. Age for 2 or 3 weeks before serving.

Glasswort adds a salty taste and interesting texture to green salads. It also may be steamed very lightly as a potherb. The plant goes especially well with eggs.

Glasswort is a cosmopolitan plant often used in making pickles.

Seaside Omelette

1 small chopped onion
3 tablespoons butter
1 cup chopped glasswort
1/2 cup cooked crabmeat
1/4 cup milk
6 eggs, beaten

In large skillet, sauté onion in butter until golden brown. Combine remaining ingredients and add to skillet. Cook on moderate heat until omelette sets. Fold omelette in half and cook until inside is set. Serves 3.

Historical Use

The sodium-rich ashes of glasswort were once used commercially in the manufacture of glass and soap. Marketed under the name "barilla," the ashes were a popular export from southern Europe and northern Africa. After they were gathered, writes Mabey in *Plantcraft*, "the plants were dried, and then burnt in large heaps. The crude ash was fused with sand to make a rough glass, or leached with lime water to make a solution of caustic soda. On evaporation this would make a clearer glass, or be used with animal fats for making soap."

Other

There are about ten *Salicornia* species worldwide. Typically, they are fleshy herbs and favor saline or alkaline habitats. Glasswort is a popular forage food for cattle and geese.

Physical Description

GLASSWORT: *Salicornia* species; *a*. Alaskan specimens are usually 2 to 6 inches high; *S. europaea* can grow to 2 feet in milder regions; *b*. Whole plant is succulent, salty in taste. Color may be green or reddish. *S. rubra* is a bright red species; *c*. Segments are jointed, longer than broad. Stems may be simple or branched. Flowers are minute, in groups of 3; they are hidden in the joints.

LOVAGE (*Ligusticum scoticum*)

OTHER NAMES: Scotch lovage, beach lovage, sea lovage, wild celery, loveroot, *bidrushga, pidrushga, petrushki, tukkaayuk*

Parsley Family (Umbelliferae)

Habitat and Range

Lovage is a plant of sandy seashores.

L. scoticum ranges from Seward Peninsula, Alaska, south through British Columbia.

Many other *Ligusticum* species, often displaying dissected leaves, range through the Pacific Northwest. Due to the many toxic plants in the parsley family, a forager should be able to pinpoint plants to both genus and species, and be certain of the edibility of plant in question. At this time, the only wild lovage I harvest for food is *L. scoticum*.

Lovage is a beach plant characterized by leaves arranged in three groups of three leaflets.

Lovage: Delectable and Deodorizing

Of all the wild edibles in the parsley family, *Ligusticum scoticum* is my favorite. This herb is one that clearly demonstrates the necessity of learning botanical names. Its common name "wild celery" is also shared by *Heracleum lanatum* and *Angelica lucida*. If you just talk "celery" with a forager, you could be referring to entirely different plants!

But even more important than the everyday name you use is your attention to detail when gathering this herb for food. Proper identity is critical, as the deadly poison and water hemlocks (*Cicuta* species) are also in the Umbelliferae family.

L. scoticum is a seaside lovage common on sandy shores from British Columbia northward. The leaves are arranged in three groups of three leaflets. Individual leaflets may have several lobes; young leaflets often have red edges. The stem is smooth and reddish-purple at the base. The leaves have a pungent smell and flavor. Once you're positive you've identified this species, you can begin your adventure with a very special herb.

Harvest Calendar

Spring to summer: leaf clusters. (These are best before flowering. To extend the season of

edibility, you can nip buds from a few plants. But allow an adequate supply to proceed to maturity, both to insure propagation of the plant and to provide you with a harvest of seeds.)

Late summer to early fall: seeds.

Food Use

Fresh lovage leaves are superb in salads and salad dressings. I especially like them in chowders, Chinese stir-fries, egg and crab salads, salmon casseroles, and meat loaf. On seaside picnics, lovage burgers are always a hit.

Lovage leaves (and chopped stems) mix well with milder greens as a tasty vegetable side dish. Besides adding flavor, they provide vitamins A and C.

Lovage is widely used year-round throughout Alaska. Grace Johnson of Nome favors dried lovage leaves in reindeer soups and spaghetti sauces. The herb's flavor improves with long simmering, making it ideal for winter wood stove or crockpot stews. For a warming broth, steep dried lovage leaves in boiling water; try this blended with vegetable bouillon or sun-dried *Fucus*.

Wild food enthusiast JoAnn Nelson of Dillingham blanches young leaves and then freezes them promptly for all-season use. Nelson says thawed lovage cooked in a microwave for a few minutes has a spring-fresh flavor.

Preserving leaves in seal oil is a technique practiced by the Inupiat. Around Kotzebue, lovage leaves are often boiled with meat or fish. In *Nauriat Nigiñaqtuat*, Anore Jones comments: "the spicy flavor goes out of the leaves and into the fish as they cook, making both taste better. The leaves and fish are drained and eaten together, hot or cold, with seal oil."

Autumn seeds are another lovage product. Add crushed or whole seeds to baked potato topping, herb breads, stews and soups, and homemade cordials and liqueurs. Powder the seeds as a pepper substitute.

Physical Description

LOVAGE: *Ligusticum scoticum; a.* To 2 feet high; *b.* Leaves divided in 3 groups of 3 leaflets. Edge of young leaves is often reddish. Leaves have a pungent scent and flavor; *c.* Flowers are small, white to pinkish, arranged in umbels with 7 to 11 rays; *d.* Back of fruits has 3 winged ribs; *e.* Stem is smooth, reddish-purple at the base.

Medicinal Use

Lovage leaf tea is a traditional digestive aid. Stuart, in the *The Encyclopedia of Herbs and Herbalism*, reports lovage root, seed, and whole fresh plant were once used in the treatment of rheumatism.

Seeds of *L. scoticum*, writes Grieve in *A Modern Herbal*, are aromatic, stimulant, and carminative (gas-expelling). Seeds are used to disguise the taste of other medicines.

Roots of *L. porteri* (a New Mexican species commonly called osha) are tinctured for treatment of severe viral infections. In *Medicinal Plants of the Mountain West*, Moore says "an almost identical plant, *L. wallichii*, is used

clinically in China for lowering blood pressure, inducing uterine contraction, and slowing postpartal bleeding. It contains volatile and fixed oils, a lactone glycoside, an alkaloid ($C_{27}H_{37}N_3$), phytosterols, saponins, and ferulic acid." Pacific Northwest researchers may wish to analyze local species to evaluate whether they contain similar properties and medicinal applications.

Cosmetic Use

The aromatic leaves of lovage *(Ligusticum* and *Levisticum* species) are famed for their deodorant properties; use in herbal baths for a fresh, clean scent. Lovage infusions make good mouthwashes and natural deodorants.

Historical Use

Ligusticum means "from Liguria," a province in Italy where the herb grew in abundance. Some writers say it was the Romans who spread this Mediterranean herb throughout northern Europe. Others insist it was the seafaring Scots (as the specific name *scoticum* indicates) who were catalyst for the proliferation of this coastal green. Both groups, however, agree it was probably the Pilgrims who carted this herb across the Atlantic and introduced it to the Americas. The herb still thrives in the historic Plymouth Plantation Gardens in Massachusetts.

In south-central Alaska, both Aleuts and Athabascans often refer to lovage as *petruski,* a Russian name; it is likely the natives were introduced to lovage use by Russian explorers.

Lovage Burgers

1 pound burger patties (beef or soy, shaped into 4 patties)
3 tablespoons soy sauce
1/4 cup chopped lovage leaves
Rolls
Mayonnaise

Rub burger patties with soy sauce, and then coat with lovage leaves. Wrap patties in foil and cook on campfire coals. Serve on rolls with mayonnaise. (Add a few chopped lovage leaves to the mayonnaise for a more flavorful spread.) Serves 4.

In monasteries, lovage was commonly cultivated as a vegetable. The British fermented the herb with tansy and yarrow as a cordial. Sailors ate this coastal herb to ward off scurvy.

Other

There are forty to fifty *Ligusticum* species worldwide. Lovage can be propagated in fall from seed or root division, and planted as an edible ornamental. The plants are very prolific. To avoid a lot of invasive weedy seedlings, cut off the seed heads in fall before they ripen and disgorge. You can, of course, harvest them as they ripen for your supply of lovage seed seasoning.

Close-up of orach showing the clasping leaves (fruiting bracts) that enclose the seed.

Sea blite is a low-growing edible plant with a salty flavor.

ORACH (*Atriplex* species)
SEA BLITE (*Suaeda* species)

OTHER NAMES: saltbush, seascale, shadscale, seapurslane (*Atriplex* species); seepweed (*Suaeda* species)

Goosefoot Family (Chenopodiaceae)

Habitat and Range

Orach and sea blite are primarily plants of coastal salt marshes. They thrive in alkaline soil.

Numerous *Atriplex* species and subspecies are distributed through the Pacific Northwest. Collectively, their range hops from Seward Peninsula, Alaska, to south-coastal Alaska and along the coast to California.

Sea blite, *Suaeda depressa*, ranges from Kenai Peninsula, Alaska, coastally to California. *S. occidentalis* occurs in alkaline areas; its range is sporadic. It has been reported at Fort Yukon, Alaska, the southwest Yukon, and southward to California. Other species also occur in our area. All are reported edible.

Orach and Sea Blite: Coastal Companions

Orach and sea blite are both members of the goosefoot family. They also share the same habitat — saline shores and alkaline soils. Growth form, however, is quite different. Orach, though not showy, can grow to two feet high, and has curious clasping leaves (fruiting bracts) that make it distinctive. Sea blite generally hugs the ground and would go unnoticed except for its red coloring.

Harvest Calendar

Spring to summer: shoots and leaves.
Late summer to early fall: seeds.

Food Use

Orach and sea blite add salty flavor to soups and stews. Scramble the plants with eggs, or use them to enliven a casserole. Their edible seeds can be eaten raw or roasted. Orach seeds were traditionally ground by Indians for flour for making breads and gruel. Ashes from burned orach greens are said to be a substitute for baking powder.

Both orach and sea blite have salty leaves that add flavor to wild salads. I like the accompanying recipe for Seaside Salad Shells for a beach picnic.

Medicinal Use

The mashed leaves, pulverized roots, and crushed flowers of orach are applied to insect bites and stings to reduce swelling. In *A Modern Herbal*, Grieve says orach leaves boiled with honey, salt and vinegar are used as an external application for gout.

Nicholas Culpeper, the seventeenth-century astronomer-herbalist, described sea blite as "cooling, drying and binding and useful in fluxes of blood." The seed tincture was once used for inducing vomiting.

Historical Use

Orach was cultivated in Asia and Africa, and was introduced to England in the mid-1500s. It is still cultivated in France under the name *arroche*. In good soil, the leaves (especially those of *Atriplex hortensis)* grow large and make a satisfactory spinach substitute.

In western North America, Indian tribes boiled orach greens as vegetables and utilized the salty cooking water in corn dishes. The roots, which contain saponins, were beaten in water as a soap substitute.

Physical Description

ORACH: *Atriplex* species; *a*. Grows 6 to 24 inches high; *b*. Flowers are small, greenish, and inconspicuous; they occur at the junction of leaf and stem; *c*. Female flowers have fruiting bracts (i.e., pairs of modified leaves that contain seed); *d*. Orach leaves are variable with species. They may be triangular, heart-shaped, or lance-oblong. Leaves may lack stalks (sessile) or have stalks (petioles). Underside of leaves is lighter in color than top side; *e*. All species are edible.

SEA BLITE: *Suaeda* species; *f*. Grows to 8 inches. The common coastal species *(S. depressa)* lies close to the ground; *g*. Leaves are semicircular in cross section and reddish in hue; *h*. Seeds are black.

Seaside Salad Shells

1/2 cup chopped orach stems and leaves
1/2 cup chopped sea blite leaves and stems
1 cup chopped goosetongue leaves
4 tablespoons chopped lovage leaves
2 cups cooked, cleaned shrimp
1/2 cup mayonnaise
1 tablespoon lemon juice
5 dashes Tabasco sauce
4 taco shells

Toss first 8 ingredients together. Fill taco shells. Serves 2.

Other

The botanical name *Suaeda* means "soda." At one time, these soda-rich plants were imported in large quantities for the making of soap and glass. Kirk, in *Wild Edible Plants of Western North America,* says soaking masses of the plants in water yields a black dye. Culpeper adds that the salty herb "... is a good and usual bait, for fishes will bite fast enough at them, if you have but wit enough to catch them when they bite."

Atriplex has over one hundred species worldwide. They thrive from the extremes of scorching alkaline deserts to the saline beaches of the blustery Arctic coast. Both orach and sea blite are relished by deer, hares, geese, and domestic livestock, as well as by foragers in search of a salty "spice" to dress up a campfire creation.

Caution

Orach is one of the plants with the ability to absorb selenium (a toxic, nonmetallic element) found in soils from Cretaceous or Eocene shales. In South Dakota and Wyoming, livestock poisonings have occurred from animals overgrazing plants that have absorbed this element. Though selenium toxicity has not been a notable problem in the Pacific Northwest, foragers (especially those that travel to those areas) should be aware of the possible toxicity and eat orach in moderation only.

SPOONWORT (*Cochlearia officinalis*)
SEA ROCKET (*Cakile edentula*)
BITTER CRESS (*Cardamine* species)

OTHER NAMES: scurvy grass (*Cochlearia officinalis*); beach rocket (*Cakile edentula*); peppercress, spring cress, water pepper, lady's smock, cuckoo flower (*Cardamine* species)

Mustard Family (Cruciferae)

Habitat and Range

Spoonwort and sea rocket favor coastal beaches. Bittercress habitat varies with species from sandy beaches to woods, moist mountain slopes, and riverbanks.

Spoonwort (*Cochlearia officinalis*) ranges from the northern coasts of Alaska and the Yukon southward to extreme northwest Oregon. It is related to the cultivated horseradish (*C. rusticana* also known as *Armoracia rusticana*) found in our area.

Sea rocket (*Cakile edentula*) inhabits seashores from Kodiak Island and the Alaska Peninsula southward to California. *C. maritima* is another California species.

Numerous bittercress (*Cardamine*) species are distributed throughout the Pacific Northwest. *C. pennsylvanica* (southeast Alaska and the Yukon to California), *C. pratensis* (northern Alaska and the Yukon south to British Columbia), and *C. umbellata* (Brooks Range and the central Yukon south to Washington) are a few species especially well known as salad plants.

Physical Description

SPOONWORT: *Cochlearia officinalis; a.* Grows to $1^1/_2$ feet. Usually much shorter; *b.* Pods roundish to broadly elliptic; *c.* Flowers have 4 white petals; *d.* Stem leaves are fleshy, egg-shaped to wedge-shaped. Petals may have short leaf stalks (petioles) or may lack them entirely (sessile). Leaves may be toothed or with smooth edges; *e.* Spoon-shaped basal leaves have long stalks.

SEA ROCKET: *Cakile edentula; f.* Flowers have 4 pink petals, 4 sepals, 6 stamens. Grow on stems to 2 feet; *g.* Pods have 2 joints. The upper one detaches readily at maturity; *h.* Leaves are fleshy with wavy or saw-toothed edges; *i.* Stout leaf stalk. Stem trails on ground, turns upward at end.

The biennial, spoonwort, has 2 leaf forms. The first-year growth is a basal cluster of spoon-shaped leaves with long stems. The second-year flowering stem has egg to wedge-shaped sessile or short-petioled leaves.

White to rose-colored flowers are typical of *Cochlearia, Cakile,* and *Cardamine.* Cuckoo flower, *Cardamine pratensis,* is shown. (Jon R. Nickles)

Physical Description

BITTER CRESS: *Cardamine* species; *a.* Flowers vary in color, with species, from white to rose-colored; *b.* Stem is smooth, circular (terete) in cross-section (*C. pratensis*). Grows 8 to 18 inches high; *c. C. pratensis* has several pairs of rounded leaflets per basal leaf; *d. C. umbellata* has 1 to 3 pairs round to oval leaflets per basal leaf; *e.* Seeds are in narrow pods (siliques).

Spoonwort, Sea Rocket, and Bitter Cress: Three More Mustards

Scurvy grass is a common name for many of the ascorbic acid-packed greens that grace the Pacific Northwest coast. It is the name Hultén applies, in his *Flora of Alaska and Neighboring Territories,* specifically to *Cochlearia officinalis.* I prefer its other common name, spoonwort, as "spoon" is the literal translation of the Greek *cochlear,* and aptly describes the first-year leaves growing on long petioles.

Like scurvy grass, rocket is a nickname applied to many genera. Originally it described *Eruca* species. This was corrupted to *Rochetta* by the Italians, *Roquette* by the French, and finally to *Rocket* by the British. Since the genus name *Cakile* is from the Arabic for a Mediterranean herb, a more apt common name than "sea rocket" is difficult to find. The species name *edentula* translates well, though. It means "to eat." Food has been man's primary use for both the rockets and scurvy grasses.

Cardamine is derived from the Greek for "a kind of cress." Various *Cardamine* species were once commonly cultivated and sold as salad greens at market. The herb, which tastes something like watercress, is well deserving of harvest. Though making a meal of this plant is unlikely, it adds piquant flavor to innumerable dishes.

Harvest Calendar

Spring to early summer: leaves.
Summer: flower buds, young pods.
Late summer: seeds.

Food Use

Leaves of young spoonwort, sea rocket, and bitter cress add zest to salads, omelettes, quiches, sandwich fillings, soups, and casseroles. Steam the greens lightly as a potherb. Use in stuffings for fish and poultry.

Mustard leaves can be juiced with milder greens like chickweed (*Stellaria media*) or sweet fruits like rose hips (*Rosa* species) for a vitamin-crammed drink.

When pickling salmon, try adding mustard pods and glasswort to the brined fish.

Medicinal Use

Spoonwort's essential oil contains sulfur compounds and has been used in the treatment of rheumatism, paralysis, and venereal disease. The herb's main function has been to treat and prevent scurvy; the raw plant is reported to be a good strengthener for the gums.

Hermann, in *Herbs and Medicinal Flowers,* says that *Cardamine* seeds are often eaten in India after meals to stimulate digestion. They also are carminative, promoting release of excess gas. Mustards, in general, are often recommended to those plagued by indigestion or lack of appetite.

Historical Use

European seamen of the 1800s frequently sought spoonwort to prevent the dreaded scurvy. This disease, caused by lack of vitamin C, is characterized by bleeding gums and anemia. Scurvy grass was much loved by greens-starved sailors. Often they baled the herb for long voyages. The succulent herb, however, stores poorly. Seamen probably obtained more benefit from their "tinctured" concoction, scurvy-grass ale.

Sea rocket was a popular beach vegetable. Canadian pioneers are said to have used the dried, ground roots to extend flour supplies in times of scarcity.

At one time, *Cardamine cordifolia,* a non-local species with heart-shaped leaves, was used to treat heart ailments. Toothwort, another species with underground stems shaped like human teeth, was advised for dental problems. These medical practices were based on the Doctrine of Signatures, a European method popular in the 1600s, which associated a plant's healing powers with its physical resemblance to human anatomy.

Other

Sea rocket and spoonwort leaves are fleshy and succulent and retain moisture; these traits are very characteristic of plants in saline environments. There are about twenty-five *Cochlearia* species in the Northern Hemisphere. Sea rocket is common on moist beach areas. *Wild Green Vegetables of Canada* reports that since sea rocket ". . . requires high concentrations of nitrogen, it thrives near sea-bird nesting sites." Hungry explorers were probably ecstatic when they discovered both the "bird AND the bush!"

Cardamine has been studied by botanists since the first century A.D. A drawing of the herb, with the name *kardamon,* is included in the *De Materia Medica* of Dioscorides. *C. pratensis,* commonly called cuckoo flower, is one of the best-tasting plants of the genus. Its common name stems from the fact that the basal leaves and stem leaves are so markedly different, making the plant look "crazy." In addition, the basal leaves root at the tip, an unusual feature in mustards.

C. umbellata is another common and tasty species. The young leaves are often purplish in tone; this hue is common to plants of very early spring. There are more than one hundred *Cardamine* species worldwide. Though some taste better than others, I know of no species that are harmful. Besides nibbling from the wild, you can plant *Cardamine* and other wild mustards in your garden. Bitter cress does well in rich, moist loam in damp areas at the perimeter of bogs and garden ponds.

Bird & Bush Bake

4 tablespoons butter
4 tablespoons honey (or orange marmalade)
2 teaspoons vinegar
1 cup crushed crackers
1 cup chopped spoonwort, sea rocket or bitter cress greens and flowers
1 cup chopped wild greens of your choice
1 cornish game hen

In small saucepan, blend butter, honey, and vinegar. Set aside 2 tablespoons butter mixture. To remaining butter mixture, add crackers and greens. Mix well. Stuff fowl with greens mixture. Baste bird with leftover butter sauce. Wrap in foil and cook in 350°F oven until tender (about 45 minutes). Serves 2.

Dandelion flowers brighten fields and roadsides. In Europe they are entered in floral exhibitions.

Gardens, Lawns, Cultivated and Disturbed Soils

A weed is no more than a flower in disguise.
——JAMES RUSSELL LOWELL

Till a patch of ground or begin a garden, and opportunity-seeking wild plants are certain to gather. Some plants, such as shepherd's purse, thrive near the lawns and gardens or cultivated fields of humans and are nonexistent (or exceptionally rare) in the wild.

Plants in this habitat section — such as dandelion, plantain, chickweed, and nettles — are familiar and recognizable. Such "weeds" provoke true partisan reactions. Dandelions meet with enthusiastic smiles and kudos, as readily as "I hate dandelions!" and scowls. In *The Bone People* by Keri Hume, I was delighted to read that the heroine cultivated her dandelion patch. I, too, confess to transplanting and cultivating such garden volunteers and even go so far, at times, as to raise chickweed and plantain as houseplants.

Some authors regard weeds such as dandelions as "guardians of the soil." Gardeners who can't reconcile themselves to cohabiting with such plants might consider using vinegar, rather than toxic weedkillers, to discourage growth.

S. media is a common garden weed.

CHICKWEED (*Stellaria* species)

OTHER NAMES: winterweed, satin flower, stitchwort, starwort, adder's mouth, skirt buttons

Pink Family (Carophyllaceae)

Habitat and Range

S. media, the common garden chickweed, thrives in gardens, lawns, disturbed soil, and mist areas. Other species favor habitats ranging from alpine snowbeds to wet beaches.

There are numerous *Stellaria* species distributed throughout our region. *S. media* ranges from the Brooks Range of Alaska and the central Yukon southward to California.

Chickweed: Garden Enthusiast

Gardeners generally regard chickweed as a good-for-nothing weed. Though it is true chickweed can be a nuisance in cultivated soil (the University of Alaska Cooperative Extension Service calls it "the most troublesome annual weed in Alaskan gardens"), the "weeds" you evict from your garden have a multitude of uses in the home.

Read on and you'll discover just how to turn your common weed into an uncommon wonder.

Harvest Calendar

Spring to fall: leaves and tender tips. Chickweed can even be found blossoming on warm winter days in milder areas of Alaska. Chickweed seeds are also edible; they can be collected whenever available. Chickweed reseeds itself and grows so prolifically that cycles overlap; flowers and seeds can often be found at the same time.

Food Use

Chickweed is a tender, mild green adaptable to a wide variety of dishes. Roger Banks, Scottish author of *Living in a Wild Garden*, especially recommends a tomato-sardine-chickweed sandwich. For a potherb, chickweed is best lightly steamed (just 3 to 5 minutes) and topped with garlic butter, Italian seasoning, Parmesan cheese, or cream sauce. Gather plenty,

as chickweed reduces greatly in volume when cooked.

I add fresh, chopped chickweed to salads, omelettes, soups, quiche, vegetable pies, and stir-fries like Chickweed Oriental.

Dried chickweed is good mixed with other dried garden (and wild) vegetables; use these to make homemade soup mixes for camping. The powdered herb is a nutritious addition to salad dressings and vegetable seasonings. Add dry chickweed and chickweed seeds to biscuit mixes. Seeds can also be used as a trail nibble or casserole garnish; western Indians often ground seeds for gruel.

For those on reduced-calorie diets, chickweed is a special plus. The greens are low in calories and packed with copper, iron, phosphorus, calcium, potassium, and vitamin C. The dry herb is a common ingredient in herbal weight-loss teas.

For a vitamin rich "wonderbrew," blend fresh chickweed and dandelion greens with vegetable broth (or water left from steaming vegetables) and flavor with herbal seasonings; this is a revitalizing spring beverage. Use it as a tonic drink when recovering from illness.

Medicinal Use

Chickweed is classed as a demulcent herb, i.e., soothing to irritated tissue. Herbalists often recommend chickweed teas and tinctures for bladder, kidney, and urinary tract difficulties. (NOTE: Since chickweed has a poor storage life, the herb is usually tinctured. To prepare, combine fresh chickweed with eighty-proof brandy in a blender. Pour the blended mixture into a jar. Shake daily for two weeks. Strain and rebottle.)

Chickweed's refrigerant properties make the herb a soothing external application to hot, painful areas. When I used chickweed-plantain salve on a severe burn, both pain and redness decreased noticeably. I also used chickweed in tanning oil when traveling to the Bahamas; my snow-white skin returned to the North burn-free. Chickweed herbal oil is also recommended by the California School of Herbal Studies for women with sore nipples; the school suggests blending this with honey and applying as needed to keep the area moist.

Eleanor Vierick of Fairbanks, Alaska, in

Physical Description

CHICKWEED: *Stellaria media; a.* Grows to about 12 inches; *b.* Flowers bloom on long stalks; the stalks arise from the junction of leaf and stem; *c.* Seed capsules are small and oval; *d.* Flowers are small, with 5 white petals. The flower petals are divided (cleft), giving the appearance of having 10 petals; *e.* Leaves, sharply pointed at the tip, appear egg-shaped in outline. They are arranged in pairs; *f.* Weak stems often trail on the ground, and roots sprout from the stem joints. A fine line of hairs runs up one side of the stem only, but switches sides at each pair of leaves.

Chickweed Oriental

2 cups chickweed tips, snipped fine with scissors
1 cup cleaned fiddleheads
1/4 cup chopped dandelion greens
2 tablespoons chopped sorrel
1 tablespoon grated gingerroot
2 tablespoons sesame oil
1/2 cup pineapple chunks
1 tablespoon soy sauce
12 ounces (1 package) chow mein noodles

Sauté greens and gingerroot in hot oil for 3 to 5 minutes. Add pineapple chunks and soy sauce. Heat briefly. Serve immediately on chow mein noodles. Serves 2.

Alaska's Wilderness Medicines, says chickweed ". . . is my favorite herb to draw the poison out in case of infections, inflammations, boils, or abscesses." The late Euell Gibbons referred to chickweed as "the magic healer"; he used the herb for insect bites, scratches, and inflammations of all kinds. The dry leaves can be simmered in oil or lard and then thickened with beeswax for a soothing salve. This is also good on saddle sores and other livestock skin ailments.

If bothered by insect stings or abrasions when camping, try mashing fresh chickweed leaves and applying them directly on the wound. Hold in place with a bandage and change the leaves every few hours.

Cosmetic Use

Chickweed is a good skin herb, suitable as an ingredient in virtually any cosmetic product. Use as a facial steam for irritated skin. Add to lotions and skin creams, and to herbal baths for a soothing and skin-softening soak.

Other

As the name implies, chickweed is well-liked by chickens and other poultry. The seeds have been used for centuries as feed for caged birds. Rabbits and pigs also thrive on the greens and seeds.

Chickweed makes a pretty and practical window box planting; when contained in such a fashion it "behaves itself" quite nicely. I keep chickweed as a houseplant; I snip the greens with scissors all winter, adding them to soups and countless food dishes. Though you may not regard chickweed in quite the same fashion as the ancient Romans (who called it "the elixir of life"), I do hope you put this hardy and nutritious garden-loving weed to work in your household!

CLOVER (*Trifolium* species)
SWEET CLOVER (*Melilotus* species)

OTHER NAMES: common clover, shamrock (*Trifolium* species); Alsike clover (*T. hybridum*); white clover (*T. repens*); melilot, curd herb, hay flower, king's clover, wild laburnum, honey clover, melilot trefoil (*Melilotus* species)

Pea Family (Leguminosae)

Habitat and Range

Look for clovers in fields and waste areas, and along roadsides.

T. pratense, *T. hybridum*, and *T. repens*, namely red, Alsike, and white clover, range from central Alaska and the Yukon to California. Numerous species are distributed throughout the Pacific Northwest.

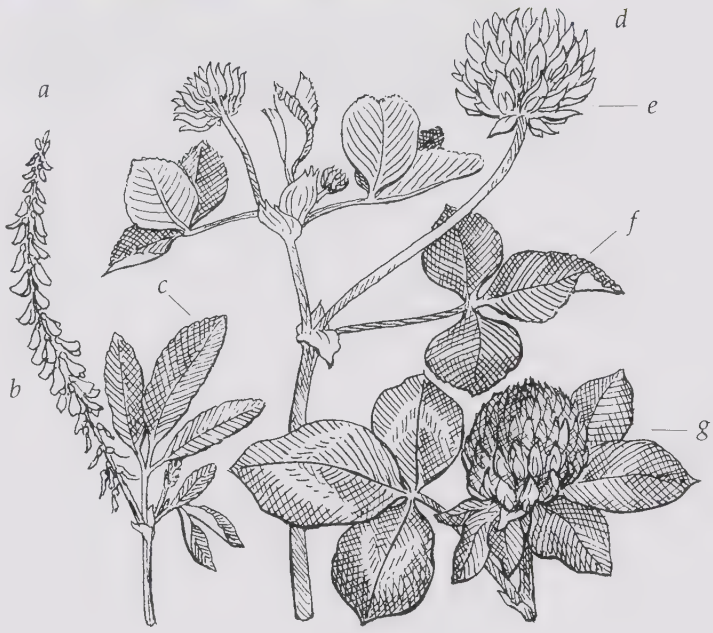
Melilotus officinalis and *M. albus* are sweet clovers that occur sporadically in Alaska and the Yukon. They also range from British Columbia to California. *M. indicus* occasionally ranges in Washington and Oregon, and commonly through California.

Clover and Sweet Clover: Good Food, Good Fortune

The *Trifoliums* are the common clovers of meadows and lawns. Along with dandelions and roses, they are among the most widely recognized wild plants. As their botanical name indicates, the plants characteristically have three (*tri*) leaves (*folium*), but my friend Marina Schaum finds four, five, and even six-leaved clovers! Four-leaved clovers are a traditional sign of good luck, and Marina is obviously luckier than I at finding such charms!

The sweet clovers, or melilots, are a common agricultural plant in many states. Like the common clovers, they often escape from cultivation, becoming what man terms a "weed." In simple terms, such escapees are plants with hearty reproductive powers that flourish where man wishes they would not. In the case of clovers and sweet clovers, these "weeds" enrich the soils in which they grow, adding significant amounts of nitrogen to the earth.

Clover (*Trifolium* species) is a common plant in lawns and fields. It is often planted as a forage and cover crop.



Physical Description

SWEET CLOVER: *Melilotus* species; *a*. Grows 2 to 4 feet; *b*. Yellow or white spikes of pealike flowers with a sweet odor; *c*. 3 oval leaflets.

CLOVER: *Trifolium* species; *d*. Grows from a few inches to 2 feet high; *e*. Flowers may be white, red, or yellow. 30 to 40 tiny pealike flowers per cluster; *f*. 3 leaflets per stem are characteristic of most species, though variations (4 and 5 leaf clovers) also occur; *g*. Growth form varies with species. *T. hybridum* is a white clover with an erect stem. *T. repens* is white with a creeping stem. Red clover, *T. pratense* (illustrated), has dense pinkish red heads, sepals with long hairs, 3 leaflets, and erect or decumbent stems.

Sweet clover flowers may be yellow (*M. officinalis*) or white (*M. albus*).

Harvest Calendar

Spring: leaves of clover and sweet clover.

Summer: blossoms of clover and sweet clover.

Late summer: seeds of clover and sweet clover.

Fall or spring: clover roots.

Food Use

Clover and sweet clover leaves can be served as potherbs. Steam the leaves for five to ten minutes and flavor with butter, lemon, and seasonings. Add the leaves to stews, omelettes, and quiche. Clover thrives in very early spring and blends especially well with nettles and dandelions.

The greens may also be nibbled raw or added to salads, but it is best to cook the leaves, or soak them in salt water for two to three hours first (to increase digestibility). Dry clover leaves are said to add a vanillalike flavor to cakes and baked goods.

Children enjoy sucking sweet nectar from clover blossoms. Add clover and sweet clover flowers to salads and soups, dip them in batter and fry as fritters, or use as a base for making wine or vinegar. Dry *Trifolium* flowers and seeds can be ground as a flour substitute or extender.

Roots have long been prized as a food by various native groups. In *Food Plants of British Columbia Indians,* Turner states that clover patches were owned by individuals or families and were passed on from generation to generation. Rocks and sticks were removed from patches so that roots would grow long and straight. Such roots were eaten by chiefs while the short crooked roots were eaten by commoners. You can try steaming or stir-frying clover roots, but beware — according to tradition you must eat your entire portion or be plagued by bad luck!

Medicinal Use

Herbalists regard red clover as "queen of the blood purifiers." Tea made from the blossoms is regarded as therapeutic for those troubled by eruptive skin diseases, hepatitis, and mononucleosis. In *Back to Eden,* Jethro Kloss calls *T. pratense* "... the most powerful remedy for cancerous growths." For throat cancer, Kloss advises gargling with strong red clover tea four to five times daily. For stomach cancer, he recommends drinking four cups daily (on an empty stomach).

Externally, tea made from various *Trifolium* species is used as a wash for skin ailments. Both clover and sweet clover blossoms have been boiled in lard and used as salve for ulcers, burns, and skin afflictions. Internally, clover teas are sipped to soothe the nerves, ease headache and arthritic pain, and to quiet a cough.

Medicinal Plants of the Mountain West recommends sweet clover poultices for mastitis, soft tissue inflammations, and sore breasts. The tea is used for upset stomach and intestinal infections. Moore cautions against long-term tea use as *Melilotus* is high in coumarin (an anticoagulant substance) and may combine inappropriately with prescription drugs, creating harmful compounds. (See Caution, following.)

Cosmetic Use

Herbs & Things recommends a thick, red clover poultice for athlete's foot. Both clover and sweet clover are often used as bath herbs. Sweet clover, especially, has an enchanting fragrance reputed to dispel melancholy. Certainly, on a cabin-fever day, a long soak in a

hot tub spiked with sweet clover would brighten anyone's outlook!

Historical Use

Clover was one of the first plants actively cultivated by man. In the Middle Ages, monks tended it in their gardens, using it both as medicine and fodder.

According to a sixteenth-century folk rhyme, each clover leaf is significant. A four-leaf clover is said to have "one leaf for fame, and one for wealth, one for a faithful lover, and one to bring you glorious health." Meditating with four-leaf clovers is recommended to increase connection to the nature spirits. Ancient Christians associated the four leaves with the shape of the cross; three-leaf clovers symbolized the Holy Trinity. Dreaming of fields of clover is supposed to augur prosperity.

Other

Sweet clover is indeed sweet-scented, due to the coumarin present in the herb; the aroma becomes even more pleasant when dried. The herb is a traditional flavoring additive in smoking tobacco, snuff, and Gruyére cheese. *Melilotus* has also been used in closets to scent clothes and protect them from moths; add the dry flowers to a chest of woolens or furs. This is a wonderful alternative to commercial moth balls!

Clovers and sweet clovers are used as fodder and bee plants worldwide. They are also commonly planted on poor soils as a green manure, thriving in soils too acidic for other legumes. The hardy plants need the help of long-tongued pollinators in order to reproduce. Bumblebees had to be imported to Australia after the introduction of clovers to insure the survival of the plants. The byproduct of this plant-insect partnership, namely clover honey, is a popular sweetener. The botanical name for sweet clover derives from the Greek for honey *(mel)* and the lotus flower *(lotus)*.

Caution

Though clover is high in vitamins and minerals and is generally regarded as a very healthful herb, an excess can be dangerous. Animals overgrazing clover fields can suffer bloat, as well as skin sensitivity. Cattle gorging on spoiled *Melilotus* hay have been known to bleed to death when injured, due to fermentation of the wet bales that had converted coumarin to the anticoagulant drug bishydroxycoumarin (Dicumarol).

Humans have been known to have difficulty digesting clover. It's best to cook the leaves, or soak clover in salt water for a few hours, before eating.

Spring Supper

4 cups cleaned, chopped potatoes
1 cup coarsely chopped clover and/or sweet clover leaves
3 tablespoons chopped chives
6 cups water
1 teaspoon salt
1 onion, chopped
4 tablespoons butter
1 cup nettle leaves
1/4 cup chopped dandelion greens
1 tablespoon soy sauce
1 teaspoon curry
1/4 cup grated Parmesan cheese
Croutons

Cook potatos, clover, and chives in water with salt until potatoes are tender. Drain, discarding cooking fluids. Sauté onion in butter until golden brown. Stir in nettles, dandelions, soy sauce, and curry. When greens are wilted, add potatos, clover, and chives. Stir well to blend ingredients. When mixture is hot, top with cheese and croutons. Serves 2 to 3. (I like to round out the meal with a fresh salad or homemade soup.)

Dandelion flowers flavor wines, herb beers, and jellies.

DANDELION (*Taraxacum* species)

OTHER NAMES: lion's tooth, yellow gowan, priest's crown, blowball, wild endive, swine snout, cankerwort

Composite Family (Compositae)

Habitat and Range

T. officinale, the common dandelion of lawns and roadsides, ranges from central Alaska and the southwest Yukon to California.

Numerous other *Taraxacum* species are distributed from the northern Arctic to California. Habitat varies from meadows to tundra and alpine slopes.

Dandelion: Coffee Substitute and Liver Remedy

Dandelions are generally despised by growers of lawns, a complaint that lovers of dandelions (such as myself) just can't comprehend. Dandelions add a colorful touch to the green carpet, and provide a season-long vegetable crop. *The Secret Life of Plants* relates that dandelions "actually heal the soil by transporting minerals, especially calcium, upward from deep layers, even from underneath hardpan." That's just one more reason to come to make one's piece with these cheery banners of spring.

Harvest Calendar

Early spring and fall after frost: leaves and roots.

Summer; buds and flowers.

Food Use

Dandelion greens are a traditional salad green; pick them before flowering for the tastiest leaves. Author John Withee, writing in *The Christian Science Monitor,* reports that he favors lightly steamed dandelions added to boiled potatoes. Later in summer, Withee starts them together ". . . because the dandelions are older and need more cooking." The bitterness of older dandelions can also be lessened by steaming greens in changes of water.

Rather than plucking dandelion leaves from the plant, many foragers cut the dandelion

about one inch below the surface of the ground. This includes the tasty dandelion "heart," that pale center with a delicate taste. It too can be added to salads, steamed as a potherb, or simmered in stews. Cream of dandelion soup, dandelion and cream cheese sandwiches, and dandelion stir-fries are all favorites of mine.

For a revitalizing tea, I often blend chopped dandelion greens (and roots) with nettle leaves and devil's club roots. Though spring is generally considered the season for the greens, new leaves sprout in fall after frost, which are again suitable for salads and beverages. The greens are exceptionally high in vitamins A, B, and C, and the minerals copper, phosphorus, potassium, iron, calcium, and magnesium.

Because of their versatility and their exceptional nutrient content, dandelion greens are sometimes cultivated. For the mildest tasting leaves, the plants are blanched. This can be done by covering dandelions with flower pots. Dandelions raised in root cellars also have an exceptionally mild flavor.

Dandelion buds are good pickled and added to omelettes. Flowers are rich in vitamin D. In *Organic Gardening*, Risea Nelson writes that when dandelion flowers are rinsed, rolled in flour, and fried in butter, they taste much like morel mushrooms! Diane Taylor of Kenai, Alaska, uses dandelion blossoms for making dandelion jelly.

In Britain and Canada, dandelion stout is a common country drink; such tonic herb beers, reports Grieve in *A Modern Herbal*, are preferred by workmen in the industrial communities as they are "cheaper and less intoxicating than ordinary beer." Dandelion flower wine is another European favorite. Grieve says the wine is suggestive "of sherry slightly flat, and has the deserved reputation of being an excellent tonic, extremely good for the blood."

Those who prefer a nonalcoholic brew may wish to sample the "dandy" cocktail recommended by the University of Alaska Cooperative Extension Service.

Fall and spring-harvested dandelion roots can be boiled as a vegetable, baked in foil with potatoes, or added to soups and stir-fries. Ground, roasted roots yield a hearty coffee-flavored beverage that lacks the caffeine buzz.

Physical Description
DANDELION: *Taraxacum officinale; a.* Dandelions may lie close to the ground or may grow to 1 1/2 feet high; *b.* Flower matures as a blowball; a breath of air or wind scatters the seeds; *c.* Yellow flowers; 1 per stem; *d.* When broken, stems give off a milky juice; *e.* Tips of leaves may be pointed or round; varies with species; *f.* Stems are long and hollow; *g.* Leaves have jagged teeth; *h.* Leaves are in a basal cluster; *i.* Long, thick, fleshy brown-skinned taproot.

Dandelion Cocktail

100 small, washed dandelion leaves
1 1/2 cups tomato juice
2 tablespoons Worcestershire sauce
Dash of Tabasco

Place all ingredients in a blender; blend for 3 to 5 minutes. Serves 3.

(See the Bedstraw section for directions on making a tasty coffee substitute.)

Medicinal Use

As the botanical name *Taraxacum* indicates (*taraxos* means disorder, *akos* means remedy), dandelions are an ancient remedy for ailments ranging from spring doldrums to mononucleosis. They have been in common usage since the tenth century.

Dandelion root contains twenty-five percent inulin (a sugar), mucilage, latex, resinous and waxy materials, teraxacerin (bitter resin), and taraxacin (a crystalline substance). *The Complete Book of Health Plants* notes that "as a remedial drug, the dandelion is often prescribed for liver troubles, gastritis, kidney disease, inflammation of the gall bladder and dyspepsia."

Herbalists advocate dandelion root teas and tinctures for hepatitis, anemia, jaundice, cirrhosis, and gallstones. The folk names piss-a-bed and wet-a-bed indicate the plant's diuretic properties; since dandelion promotes elimination of excess fluids and toxins, it is often recommended for edema, gout, and rheumatism.

California herbal teacher Christopher Hobbs, who spent four months doing a monograph of the world literature on dandelions, calls *Taraxacum* "the liver herb." The plant lowers cholesterol and high blood pressure, says Hobbs, and gives support in emotional problems, skin problems, and premenstrual syndrome. Oregon herbalist Ed Smith adds that dandelion is a good kidney herb; it is alkalizing and ideal for those plagued by chronic constipation.

Cosmetic Use

Since what goes on the skin gets absorbed by it to some degree, the nutrition-laden dandelion greens are an ideal ingredient in massage oils and footbaths. Dandelion leaves are well-suited to herbal baths and footbaths, as well as facial steams.

Historical Use

The latexlike substance in the stems of common dandelions was a folk remedy for warts. During World War II, *T. kok-saghyz* (a species containing ten percent latex in its roots) was cultivated by the Russians as a commercial source of rubber.

Europeans have long had a "civilized" attitude toward dandelions; the lovely blossoms are often displayed in floral shows. Both greens and roots are cultivated for food and beverage purposes. The dandelion was intentionally imported to America on the *Mayflower*.

Other

Children, as well as insecure lovers, delight in aiding the wind in the dispersal of dandelion seeds. (According to legend, if one seed remains after three puffs on a blowball, you have a faithful lover.) Did you know that each dandelion blowball produces about 150 seeds? Dandelions also regenerate from the taproots broken by those attempting to dig them out of lawns. In *Plant and Planet*, Huxley says that dandelions "resemble the legendary Hydra, sprouting 2 heads for every 1 cut off. Besides their competence at springing up after beheading, they are efficient at seeding. The seeds can germinate within 3 days of wetting and the plants flower within 6 months."

Though those with lawns may still wish to dig up dandelions, I'm hoping they'll put the weeds to work in the home. Besides being a healthful food source for people, dandelions are an excellent supplement for goats, pigs, and rabbits, and a good addition to compost.

Caution

Do not harvest dandelion greens or roots from lawns that have been sprayed with chemical weed-killers. Severe poisoning can result.

FIELD HORSETAIL (*Equisetum arvense*)

OTHER NAMES: jointed grass, puzzlegrass, scouring rush, pewterwort, horsetail

Horsetail Family (Equisetaceae)

Habitat and Range

Field horsetail habitat varies from fields to open woods and waste areas. Some species favor marshy areas, tundra, and scree slopes.

Field horsetail is common from northern Alaska and the Yukon to the extreme Aleutian Islands and southward to California. Numerous *Equisetum* species are distributed in the Pacific Northwest and around the world (except New Zealand and Australia). Some have a summer phase that lacks branches. For a complete description of species, consult a regional flora.

Horsetail: Pot Scrubber and Styptic

Horsetails are among the oldest of plants, survivors of the Carboniferous and Devonian periods some 300 million years ago. Then, they grew to towering size, forty-five or so feet in height; today they exist in that form only in a remote corner of the Amazon. Most modern horsetails are mere colts, rarely exceeding a foot or two in height. Cardinal Newman describes them as a ". . . forest in miniature . . . created by the fairies for their especial use and pleasure."

The botanical name, *Equisetum* (*equus* meaning horse, *seta* meaning bristle) clues us to the appearance of the green bristly-branched horsetail common in fields. Not all horsetails, however, have branches, nor are all green.

Equisetum's first spring growth is its fertile sporebearer. For field horsetail (*E. arvense*) this is a tan-colored, branchless single stem that lacks chlorophyll; its swollen conelike tip (strobilis) produces spores. The sterile green stems appear later; these have branches that grow longer as the season passes, becoming like a "horse's tail" at maturity.

Both phases of growth are characterized by jointed stems that can be easily pulled apart and put back together, giving horsetail the common name "puzzlegrass." Its nickname of

Horsetail should be gathered while the branches still point upward *(left)*. Drooping branches *(right)* indicate the plant is past its prime.

Horsetail has two growth forms. The spore-producer of early spring, field horsetail, lacks chlorophyll.

Physical Description
FIELD HORSETAIL: *Equisetum arvense; a.* To 3 feet; *b.* Green, sterile vegetative shoot; *c.* Green branches, arranged in whorls are upright when young, grow long and drooping with age; *d.* Brownish reproductive growth of early spring; *e.* Conelike top (strobilis) produces spores; *f.* Scalelike leaves; *g.* Stems of both growth forms are jointed and pull apart like puzzle pieces; *h.* Tuberous growths on spring roots; *i.* Some *Equisetum* species lack branches in both growth forms.

scouring rush refers to the gritty silica-rich stems that often serve as wilderness potscrubbers.

Harvest Calendar

Early spring: tan fertile stems and tuberous growths on roots.

Spring: green vegetative stems. For medicinal use, these should be gathered while branches point upward.

Summer: mature green vegetative stems. For potscrubbers, these are best when the branches begin to droop.

Food Use

Inland Dena'ina Athabascans dig the tuberous growths on horsetail roots as the ground begins to thaw in early spring. These are relished as the first "berry" of the year and eaten raw or with grease.

The fertile conelike stems are eaten by various peoples as a delicacy. The swollen spore-producing tip and the outer coating of the tan stem are discarded. The white inner core is nibbled raw, or added to food dishes. (Personally, I find the process a bit tedious and the product far from gourmet.)

The young green stalks that appear later have also been steamed as a vegetable. Horsetail greens are high in calcium, magnesium, and sulfur; their texture, however, makes me prefer them as a medicinal, mineral tea rather than vegetable. (See Caution, following.)

Medicinal Use

In ancient times, horsetail was a favored herb for stanching battle wounds. Today, it is still recommended as a poultice for hemorrhages, cancerlike growths, and ulcerous wounds, and as a tea for internal bleeding, kidney stones, rheumatism, bladder and urinary tract diseases, and stomach ulcers. As an external wash, it's said to be antiseptic and disinfectant and ideal for insect bites and skin eruptions.

Oregon herbalist Ed Smith gathers fresh spring horsetail, places it in a blender, and then tinctures it in brandy. Horsetail tincture is a traditional remedy for bronchitis and tuberculosis of the lungs. Smith warns that most horsetail purchased commercially is picked past its prime, after its silica has crystallized; this late summer horsetail can cause kidney irritation. (See Sundew section for tincture directions.)

Properly picked horsetail, however, is used by many herbalists in teas and tinctures for kidney problems; for bleeding kidneys, horsetail is often blended with shepherd's purse.

For lung disorders, horsetail is

frequently combined with coltsfoot, plantain, and nettle.

Maria Treben, in *Health Through God's Pharmacy*, recommends horsetail sitz baths and washings for disc lesions and serious kidney disorders, as well as ". . . inflammation of the nailbed, cracked feet, caries, old festering wounds, cancerlike growths, bony projections on the heel, fistulas, barber's itch and other herpes."

Horsetail poultices are an herbal treatment for hemorrhoids and tumors. When troubled by a painful cyst, I began applying hot packs of boiled horsetail morning and night. Within forty-eight hours, the cyst was totally drained.

Horsetail-Nettle Shampoo and Conditioner

1 cup dry nettles
1 cup dry horsetail
4 cups boiling water
3 tablespoons Castile flakes

Pour boiling water over herbs and let steep 30 minutes. Strain fluids and set aside. Pour half the fluid into a container with Castile flakes and shake well. The remaining liquid can be used as a conditioning rinse.

Cosmetic Use

Horsetail is a mineral-rich bath herb that's reported to increase circulation. Besides being refreshing to tired bodies, it's well suited to those with varicose veins and skin problems. I like adding horsetail to footbaths for sweaty or sore feet and to facial steams for troubled skin.

For washing my hair, I favor the herbal blend in Horsetail-Nettle Shampoo and Conditioner.

A decoction of horsetail (boil 1 heaping tablespoon herb in 1 cup water) is said to stimulate hair growth and eliminate dandruff and head lice. This can also be used to rid pets of fleas.

Historical Use

The gritty green horsetail stalks were used by knights to shine armor, by watchmakers and cabinetmakers as sandpaper for metal and wood, and by Indians to polish arrow shafts. The silica-rich stems are reputed to be superior to the finest grades of steel wool.

Other

When camping, try using a bundle of green horsetail stems (the older the better) as a scrubber for cleaning, shining, and disinfecting pots and pans. For extra cleaning power, add a handful of soapberries or cranberries. Wet horsetails are popular with rural gardeners for cleaning dirty hands, as well as for scrubbing fresh-pulled root vegetables.

Horsetail's vegetative stems can be used as a source of yellow-to-green dyes; color varies with mordant used. *Plant Lore of an Alaskan Island* suggests using at least 2 gallons horsetail greens to each pound wool yarn and simmering for 30 minutes.

Companion Plants and How to Use Them recommends spraying plants with a horsetail decoction (boil $1^1/_2$ ounces herb in 1 gallon water for 20 minutes) to protect them from fungus diseases. It's said to have a ". . . gentle and swift action which does not disturb soil life."

Caution

Though there are no reports of poisoning from eating the raw, white inner core of the tan reproductive shoots, the green horsetail stalks have caused difficulty. The enzyme thiaminase, which destroys thiamine (vitamin B_1) stored in the body, is believed responsible for the poisonings. Cooking destroys this enzyme and renders the plants safe for consumption.

Raw horsetail, though unappetizing to humans, is fondly relished by many horses. Overgrazing the plants (as pasture or hay) can result in loss of muscle control, convulsions, coma, and death. Dianne Davis, in June 1982 *Alaska* magazine, stated that "horses that eat hay that is one-fifth *Equisetum arvense* over a period of two to five weeks, show signs of poisoning." Massive doses of vitamin B_1 have managed to save some horses poisoned by horsetail.

Lamb's quarter often thrives in gardens. It makes a delicious spinach substitute.

Strawberry spinach is a tasty wild green. The strawberry name stems from the appearance of the mature flowers. (Janet R. Klein)

LAMB'S QUARTER (*Chenopodium album*)
STRAWBERRY SPINACH (*Chenopodium capitatum*)

Goosefoot Family (Chenopodiaceae)

OTHER NAMES: pigweed, white goosefoot, wild spinach, fat hen, fat goose, hog's delight (*C. album*); strawberry blite, Indian-paint, Indian spinach (*C. capitatum*)

Habitat and Range

Chenopodium species are common in gardens, waste places, clearings, and river bars.

Lamb's quarter (*C. album*) ranges from north-central Alaska and the central Yukon to California.

C. capitatum, often called strawberry spinach, ranges from Interior Alaska to the Anchorage area, and from the central Yukon south to California.

Numerous *Chenopodium* species are distributed throughout the Pacific Northwest. As edibles, lamb's quarter and strawberry spinach are best, although other species have also been safely consumed.

Lamb's Quarter and Strawberry Spinach: *Chenopodium* Cousins

Both lamb's quarter and strawberry spinach are members of the *Chenopodium* genus. They are related to garden spinach, and both substitute well for that cultivated green.

The botanical *Chenopodium* translates as goose (*cheno*) foot (*podium*); this refers to the resemblance the triangular leaves have to the shape of a goose's foot. White goosefoot is a common name for lamb's quarters, as its leaves have a mealy white appearance. Pigweed is another common nickname, as the herb is relished by swine (as well as sheep), and often thrives in barnyard manure heaps.

Strawberry spinach is commonly referred to as strawberry blite. Its moniker "Indian paint" stems from the use of the flowers as an Indian dye.

Harvest Calendar

Late spring to early summer: *Chenopodium* greens.

Summer: fruits of strawberry spinach.
Fall to early winter: seeds of lamb's quarter.

Food Use

Chenopodium leaves can be used in the same manner as spinach. Toss them in salads, and steam as a dinner green. Add to soups, crêpes, casseroles, and Green Fritters.

Though best when young (under one foot high), tender new growth can still be gathered from the older plants. *Chenopodium* greens are rich in nutrients — especially protein; vitamins A and C; the B vitamins thiamine, riboflavin, and niacin; and the minerals iron, calcium, phosphorus, and potassium. Those fond of lamb's quarter often gather a supply of greens while plants are in their prime, blanch (one minute), and then freeze for winter use.

Later in summer, you can harvest the berrylike fruits of strawberry spinach. These are edible, though not choice, when nibbled raw. However, the fruits can be used to make a delicious strawberry-flavored jelly, and go well in pies with other berries.

Lamb's quarter has another noteworthy food source — its seeds. Up to seventy thousand are produced on a single plant! "Poppy seed" in shape and size, they're suitable as a seasoning, grain, or coffee substitute.

These seeds can even be collected after heavy frost. To prepare, rub them between your hands and then winnow the chaff. For a buckwheatlike grain, dry in a low oven, and then grind in a flour mill.

Medicinal Use

Common Edible and Useful Plants of the West notes that boiled lamb's quarter leaves can be used as a poultice for reducing inflammation. Decoctions serve as a mouthwash to relieve toothache, and as an external rub for rheumatism.

Historical Use

Lamb's quarter was a famine plant during times of warfare. Napoleon relied on the ground seeds for making a "black bread" to feed his troops. During World War II, the greens were frequently harvested as a food source.

In Alaskan folklore, strawberry spinach is

Physical Description

LAMB'S QUARTER: *Chenopodium album; a.* Lamb's quarter is often 1 to 3 feet high; under ideal conditions, it is capable of growing to 10 feet; *b.* Small greenish flowers are in clusters; seeds are small, black, and abundant; *c.* Leaves have a mealy texture and whitish film that rubs off. Leaves are resistant to water; *d.* Stems often have a reddish tinge at base.

STRAWBERRY SPINACH: *Chenopodium capitatum; e.* Grows to 1 1/2 feet high; *f.* Flowers turn red and resemble "strawberries"; *g.* Leaves vary from triangular to arrowhead shape; *h.* Stem is smooth.

Green Fritters

Contributed by Ree Nancarrow of Denali Park, Alaska

1/2 cup water
1 cup instant milk powder
1 egg
1/2 cup flour
1/2 to 1 teaspoon salt
1 1/2 cups shredded leaves strawberry spinach and/or lamb's quarter
Mushrooms (optional)
Onion (optional)

Put water and milk powder in a bowl. Beat until milk powder is dissolved. Beat in egg, then add flour and salt. Beat again. Stir in leaves. (Add chopped mushrooms or onions if desired). Fry like hotcakes or in deep fat. Serves 2. May be served as is, or with a creamed chicken or mushroom sauce for a main dish.

considered a "bad luck" plant by the Dena'ina Athabascans. In British Columbia, reports *Wild Green Vegetables of Canada,* Thompson and Carrier Indians were fond of the plant as a source of red dye for skins, baskets, and bodies. The bright red stain eventually darkens to purple or maroon hues. Those interested in natural dyeing might wish to experiment with alum or chrome as mordants to establish colorfastness.

Other

Lamb's quarter is a welcome weed in animal pastures. Juliette de Bairacli Levy, in *The Complete Herbal Handbook For Farm and Stable,* says lamb's quarter improves the digestion and general well-being of hens, geese, sheep, swine, and other livestock.

People often plant strawberry spinach as an ornamental, and lamb's quarter as a garden green. The hardy, good-tasting, vitamin-crammed greens are generally ready to harvest long before cultivated plants are thriving. Be prepared though — the lamb's quarter that you introduce is apt to be around for your lifetime — or longer. Lewis Clark, in *Wild Flowers of the Pacific Northwest,* mentions that seeds of *Chenopodium album,* found in a bog in Denmark in 1965, were ". . . archaeologically dated at about A.D. 200, but germinated to produce plants identical with those of the same species growing today." Lamb's quarter has been a friend and food of man past and present, and is likely to be for a long, long time to come.

Caution

The *Chenopodiums,* like cultivated spinach and swiss chard and the wild docks, contain oxalic acid, a substance capable of binding with calcium to form crystals that damage the kidneys. Oxalic acid is broken down by cooking or freezing. Raw oxalate-rich greens should be eaten in moderation only. (See Dock section for additional details.)

PINEAPPLE WEED (*Matricaria matricariodes*)
ARCTIC CHAMOMILE (*Tripleurospermum phaeocephalum*)

OTHER NAMES: wild chamomile, Alaskan chamomile, dog fennel (*Matricaria matricariodes*)

Composite Family (Compositae)

Habitat and Range

Pineapple weed favors sunny paths and garden areas. Its range extends from northwest Alaska and the central Yukon to California.

Arctic chamomile ranges along ocean shores from the Arctic Ocean to the Bering Strait.

Pineapple Weed: Herb for Mother and Child

Matricaria matricariodes, the botanical name for pineapple weed, translates as "the *Matricaria* that looks like a *Matricaria!*" A closer examination of the Latin root, however, reveals a clearer picture of the herb's historical usage. *Matrix* (mother) and *caria* (dear) hint at chamomile's traditional function, as medicine for female difficulties ranging from uterine disorders to menstrual cramps. The herb (in weak tea form) was also traditional for colicky children and teething infants.

Though cultivated German chamomile (*M. chamomilla*) is a preferred species commercially, the widespread wild species *M. matricariodes* is a fine substitute for home medicines, teas, and cosmetics.

Harvest Calendar

Spring: foliage.
Summer: flowerheads and leaves.

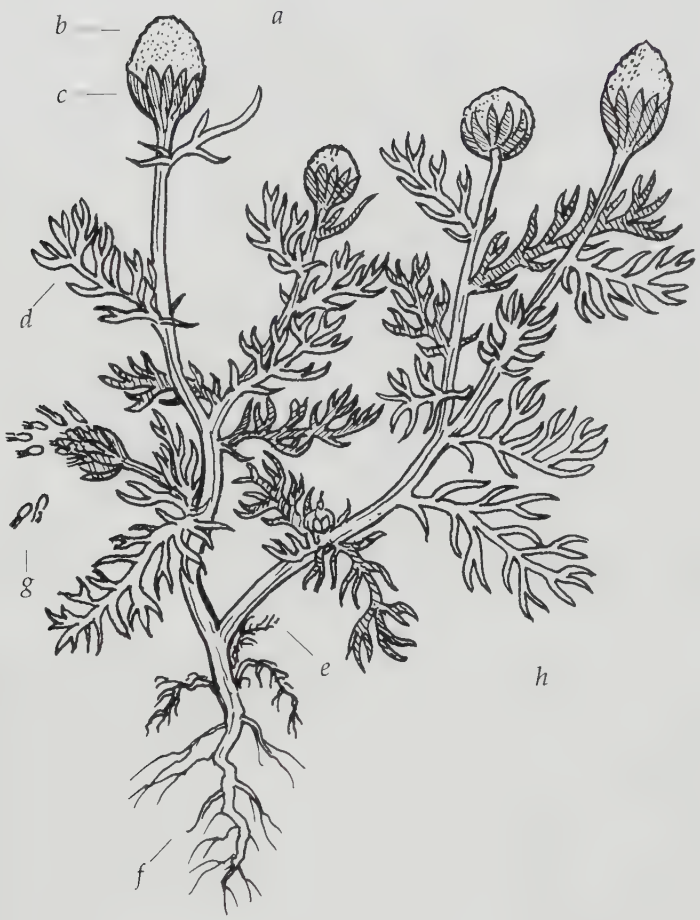
Food Use

The pineapple-scented heads of pineapple weed are a tasty trail nibble. I like adding them to salads, vegetable casseroles, and stir-fries. Munching pineapple weed flowers is one suggestion given to smokers quitting the habit.

For a pleasant, fragrant beverage, steep the flowerheads in a covered teapot in hot water. Some foragers add leaves to the brew, but others dislike the bitter flavor of the foliage.

Pineapple weed thrives even in packed soils on trails and waste places.

Tripleurospermum phaeocephalum is an Arctic chamomile that has been used for tea. (Kate Roney, National Park Service)



Physical Description

PINEAPPLE WEED: *Matricaria matricariodes; a.* Pineapple weed grows to 12 inches high under optimum conditions; often seen growing 3 to 8 inches high; *b.* Pineapple weed has greenish-yellow disk flowers with a mild pineapple aroma and taste. Ray flowers are absent; *c.* Thin transparent membrane at base of flowers; *d.* Finely divided feathery leaves; *e.* Plant may be erect or sprawling. Often found in hard-packed soil in sunny areas. Grows well despite frequent tramping; *f.* Fibrous root; *g.* Seeds; *h.* (NOTE: Arctic chamomile, *Tripleurospermum phaeocephalum,* which is common on Arctic coasts, has similar leaf structure and growth form. Flowers, however, are larger and composed of white ray flowers and central yellow disk flowers.)

Arctic chamomile, *Tripleurospermum phaeocephalum,* has also been used as a beverage. Additional information concerning this species, however, has not yet been found.

Medicinal Use

In *Dena'ina K'et'una,* Priscilla Kari writes that Dena'ina Athabascans boil *Matricaria matricariodes.* After childbirth, mothers are given a cup of the brew and a few drops are given to the newborn. The Dena'ina say pineapple weed ". . . cleans them both out and helps the mother's milk to start."

In Port Graham, Alaska, pineapple weed tea is similarly used as a nourishing tea for infants and mothers. Aleut elders, reports Smith in "Arctic Pharmacognosia," drink pineapple weed tea for relief of gas pains and stomach upset. Both Russians and Aleuts use the plant as a cure-all.

I add pineapple weed to tea blends for colds, and use the herb in steams to relieve bronchial congestion. Use the tea externally as a wash for rashes and other skin irritations. *Matricaria* can also be applied as a compress to soothe tight muscles, aches, and inflammations, as well as headache and sore eyes.

Matricaria is a soothing tea, and an ideal brew for those troubled by insomnia or "bad nerves." Pharmaceutical professor David Spoerke, Jr., in *Herbal Medications,* reports that in studies on *M. chamomilla,* "there was a marked drowsiness seen, since most of the patients fell asleep within ten minutes of receiving the tea." Spoerke adds that the herb contains alpha-bisabolol, which has a definite anti-inflammatory action in rats.

Homeopathic *chamomila,* says Ed Berg of Homer, Alaska, is "excellent for calming irritable children with earaches and teething problems. The homeopathic teething tablets sold in health foods stores are often the best-selling homeopathic remedy and are many people's first introduction to homeopathic remedies." (See Homeopathy at back of book for additional details.)

Cosmetic Use

According to Gerard, a *Matricaria* bath relieves weariness and lessens pains. Add a

muscle-relaxing decoction of pineapple weed to your bath water; blend the herb with roses for a moisturizing bath, or with mint and elder for a fragrant and luxurious soak.

Use pineapple weed flowers in baby's bath. Add the entire herb to massage oils, sore muscle liniments, and herbal deodorants. Use in hair rinses for blond hair. Take a pineapple weed facial steam weekly for a lovely complexion; blend with yarrow if your skin is oily.

Historical Use

The pineapple-scented *Matricarias* were a favorite "strewing herb" of the Middle Ages; they were spread on floors to disguise odors and freshen the home. Try as a carpet at wild herb potlucks; as it's trampled, a pleasant fragrance perfumes the air.

In British Columbia, Indian children made necklaces of the pineapple weed flower heads. Adults utilized the herb to repel insects by filling small pillows with the fragrant leaves and flowers, and scattering them among food supplies.

Matricaria is a traditional ingredient in herbal dream pillows. Use as stuffing in pillows for babies and young children to prevent nightmares. Insomniacs may find it helpful to sip pineapple weed tea and then retire on a pillow filled with the calming herb. Those who wish to gently stimulate their dream life can nap on a chamomile-wormwood pillow.

Other

Astrologically, the chamomiles are under the dominion of the sun. Pineapple weed does indeed thrive in sunny locations. It makes an excellent ground cover for garden pathways, filling your senses with pineapple-sweet fragrance as you complete your cultivating chores. It's also reported a good companion plant for ailing flora.

If you're troubled by insects while sitting around a campfire, try splashing pineapple weed tea on your face and hands. To remove fishy odors from your hands, just rub the aromatic flower heads between your palms.

Caution

Though the *Matricarias* are generally regarded as safe and gentle herbs, large frequent quantities are said to cause nausea and vomiting. Some sensitive individuals have experienced skin irritation from handling the herbs.

Sun Tea

Contributed by Jeff Wells of Fritz Creek, Alaska

Fill a jar with pineapple weed flowers, spruce tips, and a few Labrador tea leaves. Cover with water. Let sit in bright sunlight for 6 to 8 hours. Strain and enjoy. (This is also an intriguing and energizing beverage when brewed by the light of a full moon.)

P. major is a common "weed" in dooryards and lawns.

Goosetongue is a superior vegetable. Leaves are most tender before flowers appear.

PLANTAIN (*Plantago major*)
GOOSETONGUE (*P. maritima*)

OTHER NAMES: common plantain, white man's footstep, waybread, dooryard plantain, cart-track plant, soldier's herb (*P. major*); seaside plantain, narrowleaf plantain, ribwort, sheep's herb (*P. maritima*)

Plantain Family (Plantaginaceae)

Habitat and Range

Plantain is common in lawns, roadsides, and waste areas. *P. major* ranges from north-central Alaska and the southwest Yukon to California.

Goosetongue favors beaches and salt marshes. Range of *P. maritima* extends from the Alaska Peninsula coastally to California.

Numerous *Plantago* species range throughout the Northwest. The genus as a whole is quite safe, but some species are more palatable than others.

CAUTION: Foragers should be aware that *Triglochin maritimum*, which shares the same range and habitat as goosetongue, could cause identification difficulties. (Read Arrow Grass section thoroughly before harvesting any coastal plantain species.)

Plantain: First Aid for Infection

Anyone who has ever tried to eradicate plantain from a lawn is familiar with the plant's excellent reproductive powers and tenacious behavior. Less well-known is the fact that this stubborn survivor has long been regarded as the "mother of plants." Plantain, under the name *Weybroed*, is featured in an ancient Anglo-Saxon poem, where it's praised for its ability to withstand trampling by horses, wagons, and women.

> You withstood all and offered resistance.
> So withstand too the venom and contagion
> and misfortune that sweep across the land.

The many virtues of this ninth-century "sacred herb" make it well deserving of cultivation on, rather than eradication from, your homesite.

Harvest Calendar

Spring: tender leaves. (NOTE: Leaves of goosetongue remain tender well into the summer while those of common plantain quickly become tough and stringy.)

Late spring to early fall: entire plantain plant (for medicinal use).

Late summer to early fall: seeds.

Food Use

Goosetongue is my favorite plantain vegetable. I munch raw goosetongue as a beach snack, and frequently add it to salads. Try goosetongue steamed and topped with butter and grated cheese. Can goosetongue for winter use; another option is blanching the greens for one minute and then freezing in zip closure bags.

The tender spring leaves of common plantain can be added to salads, or steamed as

Physical Description

PLANTAIN: *Plantago major; a.* Flower spikes grow from 6 to 18 inches at maturity. Stamens stick out from flower spike; in a breeze they resemble dancing hula girls; *b.* Flowers grow on leafless stem; *c.* Leaf veins are parallel and very fibrous in older plants. Leaves grow in ground-hugging, circular arrangement (basal rosette). Those of variety *Pilgeri* grow upright. In good soil, leaf blades grow to 1 foot long; *d.* Long leaf stalk (petiole) attaches leaf blade to base; *e.* Flowers are greenish-white and grow in dense clusters (spikes). Flowers have 4 stamens and purplish anthers. Fruits are many capsules containing 6 to 10 seeds each.

GOOSETONGUE: *Plantago maritima; f.* Flower spikes grow to 14 inches long; *g.* Flowers are small, greenish, and crowded in terminal spikes. Under a 10x magnifier, you can see the 4 petals united into a hairy tube. Stamens stick out and "dance" in a breeze. Fruits are numerous capsules containing 2 to 4 seeds each; *h.* Leaves are long, narrow, and fleshy, with parallel veins and often a few shallow teeth. They are arranged in a cluster at the base of the plant. Leaves grow to 1 foot long; *i.* Roots are long and thick.

Plantain Plus Salve

1 pound lard*
3 cups fresh plantain leaves, roots, and flowers
2 cups fresh wormwood leaves, roots, and flowers
1 cup fresh yarrow leaves and flowers
1/2 cup dry yellow dock root (optional)
2 ounces grated beeswax
3 droppers liquid vitamin E (or 18 vitamin E capsules that have been pierced with a needle and squeezed)

Let herbs rest for a few hours after picking so that excess water (which could cause the salve to spoil) will evaporate. Place water in bottom half of double boiler. Bring to a boil. In top half of double boiler, melt lard by heat of the boiling water. Add plantain and other herbs. Heat gently until a color change takes place in the liquid lard (about 30 minutes). This indicates the herbal properties have been extracted. Strain herbs through a linen cloth and squeeze well. Return the strained fluid to top of double boiler and stir in the beeswax until melted. Remove from heat, and add vitamin E. Pour the strained liquids into clean wide-mouthed salve containers. The salve will thicken as it cools. (If the salve is not thick enough for your liking, you can reheat the mixture and add extra beeswax. If desired, you can add essential oil of eucalyptus for scent.) Use the salve on scratches, insect bites, hemorrhoids, and skin irritations; it is also excellent for livestock cuts and abrasions.

*NOTE; Since high-quality lard is often difficult to obtain, it's best to obtain pork fat from a butcher or farmer and then "render the lard" by heating in the top of a double boiler. Strain and use in the recipe.

a potherb. Adding a bit of honey to the cooking water helps remove any bitterness that might be present. Mature plantain leaves are usable if one removes the stringy leafy fibers; I like the leaves stuffed with rice filling and simmered in tomato sauce, or processed into cream of plantain soup.

Plantain seeds, though tedious to collect in quantity, can be ground and used as a flour substitute or extender; this is said to make good unleavened bread. I like the crunchy seeds as a garnish on casseroles and as a trail snack.

Medicinal Use

Many herbalists consider *P. major* their "herb of choice" for treatment of infection. Rosemary Gladstar, founder of the California School of Herbal Studies, vividly describes how a close friend, stranded in a bush situation with blood poisoning streaks running through her leg, recovered completely by applying poultices of the fresh leaves and drinking quantities of plantain tea. (Plantain tea is also highly recommended for those troubled by eczema and skin disorders.)

The Encyclopedia of Herbs and Herbalism reports plantain "... has the ability to destroy a wide range of micro-organisms, and stimulates the healing process (epithelization)." In *Health Through God's Pharmacy*, Maria Treben describes how plantain poultices healed sores that had resisted medical treatment for seventeen years. Fresh leaf poultices are effective on leg ulcers, nettle stings, burns, abscesses, insect and snake bites, cuts, and hemorrhoids. If swelling is present, Treben recommends the area first be washed with cool horsetail decoctions. Fresh plantain leaves can then be macerated, placed on the wound and covered with a bandage. When bitten by a tick, I chewed a plantain leaf and placed the pulp on the welt; the pain rapidly subsided.

The method I prefer for treating serious infection involves immersing large plantain leaves in boiling water, and then wrapping the whole leaf on the infected area. Cover with a sterile dressing. As the leaf dries, it adheres to the skin, providing extra protection. Two to three times daily, the dry leaf should be removed with horsetail tea, and replaced with

a fresh leaf. After my cousin experienced the infection-relieving properties of plantain, he enthusiatically proclaimed this herb as "the very best!"

The late Dr. Christopher advocated simmering plantain leaves in lard and then thickening the strained mixture with melted beeswax. He claimed that the lard ". . . has the magnetic power of drawing the poisons out and quickly dispersing herbal materials into the body." This ointment is suitable for bites, scratches, rashes, and skin diseases like impetigo. I used plantain plus salve on my neighbor's cow when its leg was badly injured in a coyote trap.

Fresh-squeezed plantain juice is traditional treatment for earaches. Taken internally, the juice is reputed to eliminate bronchial congestion. Plantain leaves and roots are used in teas and tinctures for bronchial asthma; plantain-coltsfoot tea is an excellent beverage for children with weak lungs.

Plantain seeds (sold commercially as Psyllium), absorb eight to fourteen times their volume in water. The whole seeds can be soaked overnight and drunk in the morning to relieve constipation. In *Herbal Medications*, Spoerke reports that the laxative action is "purely mechanical." Ed Berg of Homer, Alaska, says that powdered psyllium is used during fasting (together with bentonite) to provide some bulk in the stomach and reduce hunger. The powdered product lacks the laxative effects of the whole seeds; with this system of fasting, a daily enema is required.

NOTE: Fresh plantain leaves are considered most effective and are recommended for use whenever possible. For off-season use, prepare a supply of plantain salve and plantain tincture. Plantain leaf has a short storage life and should be used within three to six months.

Cosmetic Use

Plantain is a soothing herb for the skin. Use the whole herb in facial steams for acne, in herbal baths for rashes, and in massage oils and hair rinses.

Historical Use

Plantain is featured in virtually every plant list handed down to us by our ancestors. Scots called it *Slan-lus* or "plant of healing." American Indians referred to it as "white man's footsteps," as the plant seemed to spring up wherever the white man went. In New Zealand, it was called "Englishman's foot" for a similar reason. Dooryard plantain is another moniker; the plant appeared by my door as soon as my wilderness cabin was constructed!

Alexander the Great used plantain for curing headache. *Herbs & Things* suggests blending oil of roses with plantain juice and rubbing this on the temples for headache relief, and on the feet for arthritis pain. Shakespeare made mention of plantain's traditional healing use in his plays, as when Romeo instructs Benvolio to use it for his broken skin.

On St. John's Eve in the Middle Ages (summer solstice), plantain was smoked and then hung in barns and homes as a protection against evil. In medieval art, plantain was a symbol of "the holy path to Christ."

In India, when the mongoose was pitted against the deadly cobra in public exhibitions, it was discovered the stricken mongoose would neutralize the venom with plantain. Toads are also reported to eat plantain leaves when bitten by spiders. Pliny the Roman used the herb for combating bites of mad dogs.

The mucilaginous coating obtained by soaking plantain seeds in hot water was once used as a "starch" to stiffen French muslin.

Other

The genus name *Plantago* means "sole of the foot" and refers to the sole-shaped leaves of plantain that lie close to the ground as though stepped on. I frequently place plantain leaves in my boots before embarking on long hikes. Doing so is traditional to relieve foot pain and prevent blisters.

Rabbits, deer, and squirrels all enjoy browsing plantain leaves, and birds relish the seeds. In England, the mature spikes are often harvested and hung in bundles as feed for caged birds.

Humans, pestered by biting bugs, can rub the leaves on the skin (along with elder leaves) as a natural (moderately effective) repellent. Rubbed on trees, plantain leaves are said to heal

Plantain leaves are an effective poultice for infections and skin abrasions.

blight. A good natural dye can also be obtained from plantain; hues vary from gold to camel depending on species and mordant used.

Botanically, there are three genera in the Plantago family and almost three hundred species worldwide. *P. major* is indeed the major species, being common in nearly every country. Herbalist Susun S. Weed of Woodstock, New York, says plants (like plantain) that grow in great abundance in close proximity to humans are usually plants people have great need of in their lives and should be used frequently.

Caution

Though plantain is a soothing skin herb for most people, some individuals have been known to be allergic to it. Use normal precautions, as when working with any new substance.

Individuals with bowel disorders should consult a physician before using whole psyllium seed as a laxative.

Goosetongue and arrow grass share a seaside habitat and are sometimes mistaken for one another. Read the Arrow Grass section (*Triglochin maritimum*) before harvesting. Arrow grass does have an edible portion, but its green leaves contain cyanide!

SHEPHERD'S PURSE (*Capsella* species)

OTHER NAMES: lady's purse, pickpocket, mother's heart, St. James' weed, toywort, poor man's pharmacetty, pepper and salt

Mustard Family (Cruciferae)

Habitat and Range

C. bursa-pastoris ranges from north-central Alaska and the southwest Yukon to California. It is common in garden areas and disturbed soils.

C. rubella, a species of similar appearance, properties, and habitat, ranges from the Alaska Peninsula and southern Alaska and the Yukon to California.

Shepherd's Purse: Styptic and Salad Green

Both the genus *Capsella* (little box) and species name *bursa-pastoris* (pastoral purse) refer to the distinctive heart-shaped seedpods of shepherd's purse. In medieval Europe, country folks often had leather wallets similar in shape to this herb's reproductive pods.

The nickname pepper and salt clues us to *Capsella*'s use as a seasoning. The moniker, poor man's pharmacetty, hints at the many medicinal uses of this cosmopolitan weed.

Harvest Calendar

Leaves: prime in spring, before flowering, but may be harvested if desired until freeze-up.

Seeds: summer to fall.

Roots: autumn or spring.

Food Use

Young, tender leaves are excellent in salads and stir-fries. With age they develop a peppery taste that some find disagreeable; to lessen the bite and extend the season of use, soak the older leaves in water overnight or cook in two changes of water before serving as a potherb.

The entire herb, i.e., leaves, stems, and green seedpods, is good chopped and added to soups. The seeds can be dried and used whole, or ground as a seasoning; try this traditional pepper and salt spice in stews, casseroles, and omelettes. If you're the patient sort and have a

The heart-shaped seedpods of shepherd's purse make this plant easy to identify.

Herbal Suppository

1/4 cup dry shepherd's purse
1/4 cup dry yarrow
1/4 cup coconut oil or cocoa butter

Powder herbs in herb (or coffee) grinder. (They must be finely powdered.) Melt coconut oil or cocoa butter. Add melted oil a little at a time. Add enough to bind herbs and form a thick paste. Roll the herbal paste to form suppositories about 1 1/2 inches long and 1/2 inch diameter. Store suppositories in refrigerator (or cold place) to harden. Keep suppositories from touching each other. Insert into the anus as needed.

large quantity of seeds, you can crush the dried seedpods, winnow the chaff, roast and grind the cleaned seeds, and then use the resulting meal as flour or breakfast cereal. The less patient, or those who desire a bit more roughage in their diet, can just grind the whole pods.

For a ginger substitute, try ground or chopped shepherd's purse roots.

Medicinal Use

Shepherd's purse is my herb of choice for internal and external bleeding. It is extremely high in vitamin K, the blood-clotting vitamin. In a home emergency, just mash or chew the leaves and hold them on the cut. Since shepherd's purse frequents gardens and cultivated areas rather than wilderness, campers may wish to keep a small bottle of tincture in their backpacks. For internal bleeding, standard dosage is twenty to forty drops; take directly on the tongue or dilute in a cup of water. For external bleeding, soak a clean towel in diluted tincture and press it on the wound until clotting occurs. (See Sundew section for tincture directions.)

For soothing ulcers, add a daily cup of shepherd's purse tea to your diet. To prepare, just pour a cup of boiling water over a heaping teaspoon of the leaves. If you need an even stronger remedy for internal bleeding, simmer the herb in water until the fluid is reduced to half the original amount; sip a mouthful or two of the decoction every ten minutes or so.

Shepherd's purse may be dried for emergency use, but the herb has a maximum shelf life of only six months. (The tincture maintains full potency for thirty to forty years.)

Excess menstrual flow is another difficulty for which shepherd's purse is advocated. Drink the tea, or take drops of the tincture. In addition, you can apply a compress soaked in the shepherd's purse tea to the pelvic area.

For nosebleeds, soak a cotton ball in the tea and place it inside the nasal cavity, or roll the herb itself into a ball and stick inside the nostril. Herbalist Don Ollsin of Victoria, British Columbia, says that whenever his son gets a nosebleed, he takes him into the garden to eat shepherd's purse seeds.

Capsella is often used by midwives. In *Better Home Birth*, Yvonne Watkins highly recommends that mothers drink at least two cups of strong shepherd's purse tea immediately after baby's birth. In addition, she suggests a postnatal bath containing shepherd's purse, comfrey, kinnikinnick, alum root, sea salt, and garlic for both mother and baby. (See Kinnikinnick section for directions.)

A shepherd's purse infusion is an effective wash for cuts and scratches. Taken internally, it is reputed to be a gentle tonic for strengthening the body, a kidney cleanser, and blood pressure regulator. Herbalists recommend shepherd's purse for fevers and loose bowels; to treat diarrhea of nursing animals, decoct it in milk and bottle feed.

Add shepherd's purse to healing skin salves. A shepherd's purse-yarrow suppository is recommended to those troubled by bleeding piles.

Alaska's Wilderness Medicines reports that in laboratory tests, alcohol extracts of shepherd's purse have been found to suppress the growth of tumors significantly. Shepherd's purse is one of the most important drug plants of the mustard family; its action is attributed to the presence of bursinic acid and the alkaloid bursine. Besides being high in vitamin K, *capsella* contains significant amounts of calcium, potassium, sulfur, and ascorbic acid.

Cosmetic Use

Shepherd's purse has a gentle detergent action that is very cleansing to the skin. It is also astringent, making it good in facial steams for oily skins. Try a shepherd's purse compress or herbal bath for aches and pains. Add the herb to footbaths for tired feet.

Historical Use

Shepherd's purse was first introduced to North America by the Pilgrims. In the 1800s, the leaves were sold as salad greens in the markets of Philadelphia; today they are still grown commercially in China.

Other

Shepherd's purse thrives in even the poorest of soils. When given hospitable conditions, the leaves grow large and succulent. When blanched like growing celery (just place an inverted flowerpot over the shepherd's purse in your garden), the greens are choice.

The seeds of this herb, along with those of lamb's quarter, make an excellent food for caged (or wild) birds; shepherd's purse seeds are included in some commercial mixes.

Dairy cattle that graze too freely on this plant may produce off-tasting milk. Shepherd's purse is, however, quite safe, unless you happen to be a mosquito! Scientists at Tulane University have discovered that the seeds of shepherd's purse, when placed in water, release a mosquito attractant and gummy substance that binds the mouth of the larva to the seed. In addition, the seed releases a substance that destroys three-quarters of the larvae within three days. Just one pound of seeds is said to have the power of destroying ten million larvae. Mosquitoes do have a place in the ecosystem, and feed countless fish and birds. But when control is deemed necessary, the shepherd's purse alternative may be, by far, the safest for man and the environment at large.

Physical Description

SHEPHERD'S PURSE: *Capsella* species; *a*. Grows to 1 1/2 feet; *b*. Flowers are small with 4 white petals and 6 yellow stamens; *c*. Flowers bloom from bottom of the stem upward. After flowering, heart-shaped seed capsules appear; seed capsules and flowers can often be found on the same plant; *d*. Fruits of *C. bursa-pastoris* are heart-shaped pods; *e*. Fruits of *C. rubella* are wider and winglike; *f*. Upper leaves clasp the stem tightly. They are small and arrow-shaped; they alternate on the stem; *g*. Lower leaves are arranged in a basal rosette, and are toothed like dandelion leaves.

Mustard pods vary with species from round to long and linear.

Typical of the wild mustards are four crosslike petals. They vary in color with species, from yellow to white and pink. (Jon R. Nickles)

WILD MUSTARDS:
WILD MUSTARD (*Brassica* species)
WINTERCRESS (*Barbarea orthoceras*)
ROCKCRESS (*Arabis lyrata*)
PEPPERGRASS (*Lepidium densiflorum*)
PENNYCRESS (*Thalspi arvense*)

OTHER NAMES: bird's rape, turnip, field mustard, charlock (*Brassica* species); Kamchatka rockcress (*Arabis lyrata*); common peppergrass, peppercress, poor man's pepper (*Lepidium densiflorum*); fanweed, French weed mustard (*Thalspi arvense*)

Mustard Family (Cruciferae)

Habitat and Range

Mustards thrive in rocky or sandy soils, waste areas, old gardens, roadsides, stream banks, and moist slopes.

Numerous wild mustards of various genera are distributed throughout the Pacific Northwest.

Brassica juncea and *B. rapa*, as well as *Barbarea orthoceras*, *Lepidium densiflorium* and *Thalspi arvense*, range from Alaska and the Yukon to California.

Arabis lyrata grows from central Alaska and the Yukon to Washington.

Wild Mustards: Many Genera, Similar Uses

The mustard family is a familiar one for any gardener. Cauliflower, broccoli, cabbage, Brussels sprouts, kale, turnip, and radish are all mustard family members. For the forager, mustards are a friendly, if somewhat befuddling, group of plants. Deciphering the 375 genera and 2,000 worldwide species is a formidable task. Those in the Pacific Northwest have far fewer mustards to contend with, but the difficulties remain.

Recognizing "mustard," however is a far simpler task and the genera are quite safe to experiment with. The family name Cruciferae indicates the petals number four, like a crucifix or cross. Stamens number six, with four inner ones longer than the two outer. The seeds are enclosed in pods referred to as siliques (those that are long and lean) and silicles (those short and squat). Leaves are often pinnately divided,

though they may be entire, and basal leaves often differ from stem leaves. The plants have a characteristic peppery taste. Describing all the edible mustards goes beyond the scope of this book; *Brassica, Lepidium, Thalspi, Arabis,* and *Barbarea* are just a few of the genera that can be used in the following ways.

Harvest Calendar

Spring: young leaves (best before flowering).
Summer: buds, immature pods.
Late summer to early fall: seeds.

Food Use

Add young mustard leaves to salads, sandwich fillings, omelettes, and quiches. Try stuffing fish with mustard-seasoned dressing when camping. Many northern natives favor mustard greens that have been fermented like sauerkraut. Steam mustard leaves for fifteen to twenty minutes and serve as a potherb; be certain to gather plenty as the greens reduce greatly in bulk. The greens are high in iron, potassium, phosphorus, calcium, and vitamins A, B, and C. Save the cooking water for making soup stocks.

Later in summer, as the leaves become bitter, you can collect buds for a salad garnish. For a vegetable dish, cook the buds for three to

Physical Description

WINTERCRESS: *Barbarea orthoceras; a.* Flowers yellow on stems 1 to 2 feet high; *b.* Narrow, upright pods (siliques) with many seeds; *c.* Lower leaves lyre-shaped with terminal lobe large. Upper leaves vary from lyre-shaped and pinnately divided to entire.

WILD MUSTARD: *Brassica* species; *d.* Flowers have 4 yellow petals. Stems grow 1 to 4 feet high; *e.* Pods are narrow, upright (siliques) with many seeds; *f.* Lower leaves variable with species, smooth or hairy, deeply lobed or with entire margins; *g.* Stem leaves clasping for *B. rapa* and *B. napus,* not clasping for *B. juncea.*

ROCKCRESS: *Arabis lyrata; h.* Flowers have 4 white or pink petals. Stems grow to about 1 foot; *i.* Pods (siliques) are long and thin; *j.* Stem is smooth or somewhat pubescent; *k.* Rosette of lyrate leaves at base.

Table Mustard

4 tablespoons flour
4 tablespoons mustard seed, ground
1/4 teaspoon tumeric
1/2 teaspoon soy sauce
1 tablespoon water
1 tablespoon vinegar

Brown flour on cookie sheet in 200°F oven. In bowl, blend browned flour, ground mustard seed, tumeric, and soy sauce. Add water and vinegar (blended in equal amounts) a little at a time until desired consistency is reached. Add more fluids if necessary.

five minutes in boiling water and serve topped with butter and Parmesan cheese. Young pods may also be pickled or simmered in soups.

To collect seeds, gather the mature mustard stalks and hang to dry. Pound the pods with a mallet and then winnow on a windy day. Discard the stems and husks and use the seeds to season salad dressings, kelp pickles, and casseroles. For a condiment, grind to make Table Mustard.

Use Table Mustard on egg rolls, hot dogs, ham, Chinese dishes, etc. For "gourmet mustards," experiment! Substitute wine for the water for a French "Bordeaux" mustard. Add horseradish for a special tang. Add lemon and orange peel for an Italian condiment.

Medicinal Use

According to Culpeper, eating mustard seeds blended with honey every morning on an empty stomach will counteract snake poison, clear the voice, brighten the spirit, drive devils from the mind, prevent mushroom poisoning, cure toothache, grow hair on the head, heal bruises, and take care of cricks in the neck. Documented benefits are much more modest. Mustard seeds stimulate the flow of gastric juices and promote digestion. They are a stimulant to the gastrointestinal tract, a rubefacient for drawing blood to the surface, and an antiseptic agent for cleansing wounds.

Mustard plasters are a common home treatment for colds. To prepare, one part seed is blended with three parts flour and mixed with water to form a paste. Sandwich the paste between pieces of cotton flannel. Rub the

Physical Description

PENNYCRESS: *Thalspi arvense; a.* Flowers have 4 white petals. Stems to 2 feet high; *b.* Fruits are a large roundish pod (silicle); *c.* Stem leaves have arrowlike base. Stem is mostly simple. Lower leaves have leaf stalks (petioles); lower leaves soon wither.

PEPPERGRASS: *Lepidium densiflorum; d.* Abundance of small, roundish silicles. Petals are lacking or shorter than sepals; *e.* Stem is minutely pubescent and freely branching. Stem leaves have smooth margins or are slightly toothed.

congested area with olive oil and then top with the mustard pack. Leave on for ten to fifteen minutes. The area will become warm; remove the pack before any discomfort occurs and then sprinkle the skin with soothing bath powder. Blistering can occur if the pack is left on too long. Those with sensitive skin can substitute egg whites for the water in the paste recipe, and/or use rye flour in place of wheat. The ratio of mustard seed to flour can also be reduced if necessary.

Spoonfuls of mustard seed salve, blended with essential oils of camphor and eucalyptus, are traditionally placed in vaporizers (or boiling water) and inhaled as a decongestant steam for nasal and chest congestion. Mustard seeds are also a common ingredient in liniments for rheumatic pains. The mashed greens, applied as a hot poultice, are reputed to reduce inflammation and infection; administered cold, they are touted as a muscle relaxant.

Cosmetic Use

For cold or tired feet, add mustard seeds to your footbath. For a stimulating wakeup bath, scrub yourself with a mustard flower infusion and a loofah sponge.

Historical Use

The name mustard is associated with the Roman practice of soaking the seeds in newly fermented grape juice (called "must"). This was drunk as a stimulant to prepare armies for battle.

In China, mustard oil obtained from *Brassica rapa* was used for illumination until the introduction of kerosene. One *Arabis* species was boiled with rice and eaten as a laxative.

Wild mustards spread to the Americas by hitchhiking in the seed sacks of settlers. Missionaries deliberately planted the cross-shaped flowers to indicate the path from one mission to the next. According to the biblical verse of Matthew (2:20) "If ye have faith as a grain of mustard seed, ye shall say unto this mountain; remove hence to yonder place; and it shall remove."

Other

Despite the high nutritional value of mustard greens and the tenacity of the plants, mustards remain a neglected northern crop. Alaskans, hungry for hardy greens, might do well to sow the plant in fall in their greenhouse. If you introduce the plants to your garden, you're apt to have permanent guests.

In Europe and Asia, the *Brassicas* are widely cultivated, but in the Americas the plants are generally regarded as pests in agricultural ground. They are, however, valuable as green manure, and provide good fodder for sheep and cattle. Moose and squirrels favor the greens while birds, both wild and caged, relish the seeds.

Caution

Pure mustard oil should never be applied to the skin as it can cause severe blistering.

The seeds, taken internally in large quantities, have been known to poison livestock. Since mustard is generally used in small amounts, complications in humans are normally avoided; immoderate use could spark gastrointestinal irritation.

Yarrow flowers are composite, i.e., made up of both disk and ray flowers. Flowers range from white to pink or reddish. Leaves can be fernlike or with serrated edges.

YARROW (*Achillea* species)

OTHER NAMES: milfoil, yarroway, thousand-leaf, nosebleed, soldier's woundwort, poor man's pepper, devil's plaything, field hop, staunchwort, bindwort, sneezeweed

Composite Family (Compositae)

Habitat and Range

Yarrow is common in garden areas, meadows, sandy slopes, and dry areas.

Regional *Achillea* species included *A. lanulosa* (also known as *A. millefolium* subspecies *lanulosa*) and *A. borealis* (Alaska and the Yukon to California), *A. sibirica* (Alaska and the Yukon, *A. ptarmica* (Alaska Panhandle and British Columbia), and *A. millefolium* (Yukon to California).

Yarrow: Cold Reliever and Hops Substitute

Yarrow's botanical name, *Achillea*, honors the ancient hero Achilles. According to folklore, Achilles's mother dipped him into a yarrow bath to make him invincible. However, since she held him by his heel, that part never got dipped and he was left vulnerable through his "Achilles' heel."

Other stories relate how Achilles stanched his soldier's wounds with poultices of crushed yarrow. The herb has pronounced blood-clotting abilities. When I sliced my finger badly, applying pressure was having little effect on stopping the bleeding. In desperation, I chewed a leaf from my front door yarrow patch and held that in place. As soon as I applied the yarrow, clotting began.

Harvest Calendar

Spring: leaves.

Summer: leaves and flowers.

Food Use

Dried, ground yarrow leaves have been used as a seasoning, traditionally called "poor man's pepper." A report in *Foxfire 3* suggests frying fresh yarrow flowers in butter until brown, and serving hot, sprinkled with sugar or orange juice.

In southeast Alaska, Haida Indians enjoy

the flavor of butter clams strung on yarrow stems. I like adding a few young yarrow leaves to spring salads and dressings.

Medicinal Use

Yarrow tea, drunk hot, induces perspiration. A classic brew for fevers consists of equal parts yarrow flowers, elder flowers, and mint.

Yarrow is my herb of choice for colds and flu. Treatment consists of dressing warmly in wool hat and bathrobe and sipping yarrow tea while sitting next to a roaring wood fire, with my feet luxuriating in a steamy yarrow footbath. When sweating freely, I retire to a warm, draft-free bed. If done promptly at the first signs of a cold, I find symptoms are generally aborted by morning.

An alternative cold treatment (for individuals with saunas) consists of placing yarrow leaves and blossoms on hot rocks and sprinkling the herbs with water for a fragrant steam. Sip yarrow tea and inhale the yarrow vapors until sweat flows profusely.

Dena'ina Athabascans use yarrow tea as an internal remedy for new mothers and infants, and externally for skin rashes. Yarrow hot packs are applied to aches and pains. Inhaling vapors from yarrow boiled in water is medicine for stuffed sinuses.

Smith, in "Arctic Pharmacognosia," reports that Aleuts place crushed yarrow on bleeding wounds to stimulate clotting, and to soothe chest pains and muscular aches. Nunivak Island Eskimo dry yarrow as a medicinal tea.

Maria Treben, in *Health Through God's Pharmacy*, says that yarrow, first and foremost, is a tea for women, and recommends yarrow tea for irregular menstruation and menopause, as well as general health of the reproductive organs. For inflammation of the ovaries, prolapse of the uterus, and fibroids, Treben suggests yarrow sitz baths. She adds that 'yarrow acts directly and best on the bone marrow and thus stimulates blood renewal." She advocates that yarrow tea be drunk for abdominal cancer, bleeding hemorrhoids, and bleeding in the stomach or lungs.

If troubled by toothache when camping, try chewing a fresh yarrow leaf. For nosebleed, place rolled yarrow leaves inside the nostrils.

Physical Description

YARROW: *Achillea* species; *a*. Grows 1 to 3 feet high; *b*. Flowers are in convex clusters (corymbs); *c*. Leaves of common yarrow (*A. borealis*) are fernlike. *A. lanulosa* has narrower fernlike leaves. *A. ptarmica* has saw-toothed, forward pointing teeth (serrated leaves). Leaves of *A. sibirica* have sharp teeth (incised); *d*. The modified leaves (bracts) under the flower clusters of *A. borealis* have dark brown margins. Bracts of *A. lanulosa* are light brown or yellow; *e*. Flowers are composite, having both ray and disk flowers. Flowers are generally white, but may be pinkish or red; *f*. Dry seed stalks retain a characteristic yarrow scent.

Yarrow Facial Steam — For Oily or Blemished Skin

1/3 cup yarrow leaves and flowers
4 cups boiling water
Towel

Steep yarrow in boiling water. Let sit covered for 5 minutes, then carefully remove cover. Form a tent over the pan with a towel. Insert your head into this tent, keeping your face about 6 inches from the surface. Bathe your face gently with the steam for 10 minutes. Then splash your face with cold water to close the pores.

Lay fresh leaves on your forehead to alleviate headache.

I frequently add yarrow flowers and leaves to skin salves for rashes, bruises, and bleeding piles. JoAnn Nelson of Dillingham, Alaska, suggests placing a pad of heated yarrow on arthritic areas. To stimulate a late menstrual period, herbalist Ed Smith of Oregon, recommends sipping yarrow tea, and taking a hot footbath with mint and cayenne.

In the *Journal of Pharmaceutical Studies,* Arthur Goldberg writes that yarrow flowers "possess definite anti-inflammatory properties. . . . These properties consist mainly of plant proteins and carbohydrates, and are most active in water extracts or teas and tinctures." (See Caution, following.)

Cosmetic Use

Yarrow facial steams are excellent for oily and irritated skin. The herb is frequently added to skin lotions and facial steams for chafed skin.

Strained yarrow tea is reputed to be an effective hair tonic for stimulating hair growth and preventing baldness. Yarrow stems and blossoms make a fragrant and soothing herbal bath. In *Down-To-Earth Beauty,* Palmer reports yarrow is a traditional cosmetic for ensuring ". . . a glad voice, warm lips, and a sweet figure."

Historical Use

Rubbing your clothes and skin with yarrow is an ancient prescription for repelling biting insects; stalks can also be burned on campfire coals to deter mosquitoes. Yarrow is traditional in dream pillows "to prevent melancholy." For sore feet, Appalachian mountain folk placed yarrow in their shoes. Various natives placed bunches of yarrow inside salmon to promote quick curing.

The nickname, devil's plaything, is derived from yarrow's long use in divination and witchcraft. According to legend, if you wish to be successful in love, pick yarrow from a grave at midnight. To free yourself of fear, wear a bouquet of yarrow blossoms. To discover if your lover is faithful, tickle the inside of your nostril with yarrow while reciting "Yarroway, Yarroway, bear a white blow, if my love love me, my nose will bleed

now." Fortunately, you can use yarrow to stop the nosebleed prompted by your love being true!

Other

Companion Plants and How to Use Them reports that yarrow increases the aromatic property of other herbs. Yarrow is a good compost and companion plant. Grown in pastures, a feed of exceptional nutritional value for cattle results.

Yarrow is used in China in consulting the *I Ching*. In *Health, Happiness and the Pursuit of Herbs,* Dawson describes how one yarrow stalk is set aside, and the remaining forty-nine are randomly divided into two piles. "From this point on, a complicated procedure was used to arrive at a hexagram and its interpretation."

Yarrow is used in herbal snuff and smoking tobacco. The herb is also a hops substitute for brewing; in Oregon, I sampled a delicious and potent home-brewed yarrow beer.

Yarrow is excellent in facial steams for oily or irritated skin. (Edward Schofield)

Caution

Though yarrow has been used for centuries, it is considered a potent medicinal, rather than an everyday beverage. The FDA has approved yarrow use only in alcoholic beverages, and only when it can be guaranteed free of thujone.

In *The Encyclopedia of Herbs and Herbalism* is the warning that large doses of yarrow can produce headaches and dizziness. Michael Moore, in *Herbal Tinctures in Clinical Practice,* adds that *Achillea* tincture is contraindicated "in pregnancy, bradycardia, coagulation disorders, nephritis." In *The Herb Book,* Lust warns that extended yarrow use can make the skin light-sensitive.

HARVESTING AND DRYING HERBS

Wild plants are often vastly superior in **nutrition** and **flavor** to store-bought produce. They are **free of pesticides** (if harvested in clean areas) and **free of cost**. For me, harvesting combines a healthful, enjoyable walk with the benefits of no-cost, fabulous vegetables, home remedies, cosmetics, and natural dyes. Drying extends these benefits over a long period of time.

HARVESTING

Tools for Harvesting

Tools needed are minimal. When collecting near home, I favor a **collecting basket**. For car-based trips, I recommend **large paper bags** for storing the herbs. (Herbs can compost quickly if in a plastic bag in a hot car!) Even when stored in paper bags, plants should be transferred to drying racks as soon as possible.

A **knife** will be needed for collecting bark, and a **hand trowel** for digging roots. I often use **kitchen shears** or **scissors** for snipping greenery.

In addition, a **field guide** is highly recommended. A personal **notebook** is another useful tool; use it to record location of prime herb patches, the date collected (and the stage of the plant's maturity), and other pertinent data. Use a **plant press** for collecting new specimens; include the plant's botanical and common names, habitat, location, collection date, and name of collector.

Places to Gather Wild Plants

(Prepared in conjunction with the Alaska Native Plant Society)

1. Lands scheduled for development are prime lands for digging wild plants for gardening purposes. If the owner is unknown, call the municipality or borough zoning and platting department. For new road construction, contact the Department of Highways — right-of-ways. Permission is generally readily granted. Valerian, twisted stalk, and elder are just a few of the wildlings in my Homer garden that I rescued from lands slated for bulldozing.

2. Check with your state or province for foraging rules. In Alaska, foraging wild plants is **not allowed** in national, state, and municipal parklands and campgrounds. It is **not allowed** on private property, unless permission is obtained from the owner. Bans also exist along highways, and in Portage Valley and Turnagain Pass. Foraging **is allowed** at least fifty feet back from the highway on state land that is not designated as parkland, and at least two hundred feet back from established trails, roads, and campgrounds in national forest.

3. When digging wild plants in permitted areas, do follow these guidelines:

   a. Take plenty of soil, and **BE SURE** to fill in the resulting hole with downed plant material, rocks, or soil. A hole is not only unsightly and dangerous to leave, but also does great damage by exposing roots of nearby plants.

   b. After digging your new plant, replant it as soon as possible. Water well the first season.

Harvesting Guidelines

1. **Be positive of the plant's identity!** If in doubt, don't harvest. To expand your knowledge of plants, study field guides and floras and taxonomic keys. Go on plant walks with knowledgeable guides. Take classes. Spend time in the field observing. If you can't recognize a plant when it first appears, return time and again during the season. When the plant is in flower, it is easiest to identify. As you repeatedly follow plants through the seasons, you will learn to recognize them in all seasons and stages of growth.

Sit and meditate with plants. Plants teach you a great deal about themselves. Listen to your intuitive flashes, but back them up with other knowledge as well!

2. **Harvest each plant and each plant part in its proper season.**

Roots: fall to spring. In these seasons sugars, starches, and other nutrients are stored in the roots. During the growing season (when the plant is busy producing leaves, flowers, and fruits), roots tend to be tough and tasteless. Use

a vegetable brush to clean roots. Roots may be dried whole or sliced; resinous roots are generally split in half and dried.

Leaves: spring before flowering (unless the whole herb is gathered). Once the flowers appear, the leaves often become tough or bitter. Avoid diseased or bug-eaten leaves. With leaves, I generally harvest a few from each plant; the actual amount depends on the size of the plant and what I feel it can spare without harm. Use your best judgment.

The tops of some plants, such as mint, can also be collected; this encourages the plant to produce new growth. Mint can be harvested several times during the season.

Flowers and buds. Gather buds when they are almost ready to open. Collect flowers when they're freshly opened, before fading or wilting occurs.

Seeds. Collect seeds when ripe. To gather, cover the plant with a paper bag, cut the stem and hang it upside down. Seeds will fall into the bag in a few days. Shake the stem to make certain all seeds are released. (Leave plenty of seeding plants in the field to assure reproduction of the herb patch.)

Whole herb. The whole herb is generally picked when flowering.

Bark: spring or fall. Harvest bark from a pruned branch (unless the tree has been harvested for firewood). Chip bark with a small ax or a knife.

Berries. Harvest berries when ripe. Rose hips are best after frost. (Some fruits are picked slightly underripe for making preserves.)

3. **Pick herbs at the proper time of day**. Collect in the morning after the dew has evaporated, or in early evening before moisture sets in. Avoid collecting in the hot sun, as well as on damp days.

4. **Gather with respect and awareness**. Don't disrupt the balance of the plant community. Be aware of the effect of your harvesting. The plant community should increase in vigor and abundance as a result of your gathering.

5. **Gather only from healthy plants**. Avoid plants plagued by insects or disease.

6. **Gather only in clean areas, away from roads, electric lines, railroads, sprayed areas**. Stay at least fifty feet from roads to avoid contamination from car exhaust.

7. **Gather only when there is a sizable community of plants**. Be careful of endangered or rare species.

8. **Leave enough leaves, fruit, seeds, and flowers** so the plant can continue to exist abundantly.

9. **Leave an abundance of roots**. Gather no more than one out of ten roots. (With some plants, such as chocolate lily, you can replant by knocking a bulblet back into the hole you have dug.)

10. **Pick only what you can process properly**. Avoid plants going to waste through mishandling. Gather only what you can properly process and use during the season.

11. **Pick to propagate**. Prune plants, don't bulldoze! Develop a caretaker attitude toward the plants. Leave plenty of healthy strong plants to seed other plants. Don't pick all the "breeding stock."

Harvesting Rituals

I find that harvest rituals increase enjoyment of the time spent in the field, and heightens sensitivity toward the plants.

1. An American Indian ritual involves turning to the seven directions before gathering: east, south, west, north, father sky, mother earth, and sister moon — while scattering cornmeal and thanking all for gifts.

2. Seek the elder of the plant community — the oldest tree or strongest plant in the community. Take a moment and meditate. Leave a gift. Mentally ask permission to gather.

3. Plant something each time you harvest. Plant seeds where you harvest a root.

4. A simple ritual is to offer a prayer of thanks for the harvest.

DRYING

Drying Basics

To dry herbs effectively, you need a **warm, shady area** with **good ventilation**. Herbs should be **out of direct sunlight**, as sun can bleach the plants. My favorite drying places are above the wood stove and in the sauna when

temperatures have moderated to 70° to 100°F. Some foragers like to use the pilot light of a gas oven as the heat source for drying.

Methods of Drying Herbs

1. **Bundles**. Many whole herbs are hung to dry in bundles in a warm but airy location out of direct sun and dust. Bundles can be tied with rubber bands. Moist herbs (such as horsetail) should be in small bundles as mold can easily form. Drier bulky herbs (such as willow) can be in larger bundles. As soon as the herb is dry, it should be transferred to storage containers. I often tie two herb bundles together and string them over a beam.

2. **Drying rack**. To make a drying rack, construct a frame of two-by-twos and cover with nylon screening. (Aluminum screening can taint the herbs. If metal screening IS used, be certain to cover it with a layer of cheesecloth.) Hang the rack in a warm, shady area, and spread the herbs loosely on its surface.

3. **Baskets**. Place herbs in a single layer in shallow baskets and hang in a warm place. This is a good method for drying small quantities of herbs. I often use it to dry organic orange peel, chopped green onions or chives, and other leftover fruits or vegetables.

4. **Floor**. During "emergencies" (when you've picked more herbs than you have space to dry), you can place plain brown paper or muslin cloth on a floor and spread the herbs to dry. Herbs must be turned at least once daily. The first three methods are recommended; this one can serve in a pinch.

Drying Times

If conditions are ideal (a balmy breeze), leaves and flowers should be dry in four to six days. Roots and stems take anywhere from one to three weeks.

Bend the herbs to test for dryness. They should be brittle, but not so dry that they disintegrate. If too much moisture is left in the plants, they will mold.

Herb Storage

Store herbs in airtight containers in a dark closet. *Label and date all herbs.* Trying to identify dried, unlabeled herbs three months after the fact is a challenge I recommend you bypass. Label your herbs!

I like to store herbs in gallon glass jars in a dark closet. Wooden and cardboard boxes that seal well can also be used for herb storage. Some foragers discourage using plastic bags; others swear by them. If herbs are THOROUGHLY dry, I find that placing herbs in paper bags inside a sealed plastic bag can work quite well. (This is the method I generally use when I run out of glass containers.)

Shelf Life

Most leaves and flowers have a shelf life of one year. Roots and barks are generally good for two. Some plants, such as chickweed and shepherd's purse, have a shelf life of only six months.

(This section was based on information taught by David Bunting and Rosemary Gladstar in California School of Herbal Studies classes.)

HOMEOPATHY

WHAT IS HOMEOPATHY?

Homeopathy is a two-hundred-old branch of medicine based on the Law of Similars. According to Cummings and Ullman in *Everybody's Guide to Homeopathic Medicines,* "the fundamental tenet of homeopathy . . . states that a substance which causes a set of symptoms in a healthy person acts as a curative medicine when given to sick people who have its similar symptoms."

SYMPTOMS VERSUS DISEASE

Homeopathic treatment is aimed at stimulating the body's defensive mechanisms, and the remedies do nothing that a healthy body would not do. Each patient is considered an individual with an individual symptom picture and remedies are selected accordingly.

HOMEOPATHIC REMEDIES VERSUS HERBAL REMEDIES

Unlike herbal medicine that uses whole herbs, often in combination with other herbs, homeopathic remedies are dilutions that are usually used singly.

Homeopathic remedies are formulated from plants, as well as from substances such as bee venom, activated charcoal, arsenic, and copper. Remedies are prepared in a complicated pharmaceutical process that involves successive dilutions of the remedy, followed by vigorous succussion (shaking or pounding) of the remedy. A "potentized" remedy results. A homeopathic teacher, Ed Berg of Homer, Alaska, explains that the second dilution, called the "2X potency," has 1/100 (1 percent) of the original solution. Common remedies for acute conditions are 6X, 12X, and 30X potencies, but potencies can go to 1,000X and 50,000X for long-term chronic conditions.

The paradox (to conventional thinking) is that the more the remedy is diluted, the stronger its effect. Cummings and Ullman say that "homeopaths have found . . . that generally the more a substance is potentized, the deeper it acts, the longer it acts, and the fewer number of doses are required in treatment."

Ed Berg says that "if these remedies are analyzed chemically, there is, above the 30X potency, almost no chance of finding a single molecule of the original material. One theory," explains Berg, "proposes that water can form polymers (weak chains of water molecules) that somehow retain information about the raw material in the original solution. Furthermore, the pounding is absolutely essential: experimenters have measured differences in the magnetic properties of pounded and unpounded remedies. Without pounding, the remedy is magnetically identical to ordinary water and has no medicinal effect." Despite the fact that there is no scientifically confirmed explanation of how the remedies work, their effects have been well demonstrated in animals, plants, bacteria, and humans ranging from small children to adults.

AVAILABILITY OF HOMEOPATHIC REMEDIES

Homeopathic remedies are formulated by special pharmacies, such as John A. Borneman & Sons, Inc., 1208 Amosland Road, Norwood, Pennsylvania 19074. (They can often be purchased in natural foods stores.) Remedies commonly use sugar pills as the base for the homeopathic dilution; alcohol-based tinctures are also common. Berg warns that homeopathic remedies ". . . cannot be prepared at home, as one would brew up an herbal tea. A tea of aconite or arsenic would probably be quite fatal!"

HOMEOPATHIC USE OF TOXIC SUBSTANCES

"The best homeopathic remedies," says Ed Berg, "are the most violent poisons. *Aconite* from monkshood, *Aconitum,* is an extremely toxic alkaloid that causes sudden fever, vomiting, and death. The dilution and pounding of the remedies eliminates the toxic effects and amplifies the stimulative effects. For this reason, one uses the remedies to treat precisely those symptoms in a sick person that are similar

to the toxic effects. *Aconite,* for example, is an excellent remedy to use in the first stages of a violent flu attack, where there is sudden fever, vomiting and restless anxiety, i.e., precisely the symptoms of *Aconite* poisoning."

A FEW HOMEOPATHIC REMEDIES

Plants discussed in this book that have homeopathic remedies commercially available include:

Aconite (monkshood) — for ailments from fright, as well as the first stages of a cold.

Arnica montana (arnica) — for bruises, sprains, and shock.

Drosera (sundew) — for dry, spasmodic coughs.

Equisetum (horsetail) — for bedwetting.

Euphrasia (eyebright) — for eye disorders.

Iris (wild iris) — for periodic migraine headaches accompanied by changes in vision.

Ledum palustre (Labrador tea) — for treating puncture wounds.

Lycopodium (club moss) — for treating anxiety.

Urtica (stinging nettle) — for treating hives.

Veratrum album (false hellebore) — for treating violent diarrhea, as well as heat exhaustion.

POPULARITY OF HOMEOPATHY

Homeopathy, which originated in Germany, is popular in India, Europe, and many countries throughout the world. Ed Berg says that "the fact that homeopathy has virtually no side effects has led to a great resurgence of interest in it in the United States as part of the holistic health movement."

RECOMMENDED TEXTS FOR ADDITIONAL INFORMATION ON HOMEOPATHY

Cummings, Stephen, and Dana Ullman. *Everybody's Guide to Homeopathic Medicines.* Los Angeles: J. P. Tarcher, 1984.

Panos, Maesimund, M.D., and Jane Heimlich. *Homeopathic Medicine at Home.* Los Angeles: J. P. Tarcher, 1980.

NOTE: This information is intended to acquaint those unfamiliar with homeopathy with its basic principles. Do not take homeopathic remedies on the basis of this information. Consult a homeopathic physician or comprehensive homeopathic texts so that a complete symptom picture can be developed and the remedy accurately selected.

FLOWER ESSENCES

WHAT IS A FLOWER ESSENCE?

A flower essence is an infusion of fresh flowers in pure water. The Alaskan Flower Essence Project reports that essences ". . . contain the unique vibrational qualities of the individual plant used and offer a new way to access the healing qualities of the plant kingdom."

PREPARATION OF ESSENCES

Essences are made on a bright, sunny day when the blossoms are at their peak. The process involves a meditative attunement with the plant, followed by floating flowers in pure water and using the sun as an energy source to extract the plant properties. Brandy is added to preserve this "mother essence."

ALASKAN FLOWER ESSENCES

To date, sixty Alaskan Flower Essences are being marketed. According to flower essence practitioner Steve Johnson, when you take a flower essence internally "you bring into your system the natural, harmonious energy of a particular flower, which acts as a catalyst to stimulate your own healing energies."

FLOWER ESSENCE QUALITIES

Plants discussed in this book that have flower essences available are:

Achillea borealis (yarrow) — for knowing and being the source of one's own protection.

Aconitum delphinifolium (monkshood) — for increasing the ability to interact with others through a stronger identification with oneself.

Alnus crispa (alder) — for clarity of perception on all levels.

Aquilegia formosa (columbine) — for appreciation of one's personal beauty, regardless of how it differs from the norm.

Betula papyrifera (paper birch) — for aligning oneself with true purpose.

Caltha species (white marigolds) — for radiating clarity into areas surrounding use.

Chenopodium album (lamb's quarters) — for accessing information through the heart before interpreting it through the mind.

Cornus canadensus (bunchberry) — for mental clarity in demanding situations.

Drosera rotundifolia (round-leaved sundew) — for merging with the source of life through relinquishing identification with the ego self.

Epilobium angustifolium (fireweed) — for grounding and encouraging the flow of energy through the body to relieve pain and discomfort.

Epilobium latifolium (river beauty) — for making the most of trying times and adverse circumstances.

Equisetum arvense (horsetail) — for enhancing clear expression from higher sources of inspiration.

Eriophorum species (cottongrass) — for restoring equilibrium after injury or trauma.

Geranium erianthum (geranium) — for freeing one's potential.

Heracleum lanatum (cow parsnip) — for contentment with the present.

Iris setosa (wild iris) — for releasing creativity in focused ways.

Ledum palustre (Labrador tea) — for centering energy in the body — in the moment; helps one learn a perspective of balance.

Matricaria matricariodes (pineapple weed) — for harmony and health of mothers and children.

Mertensia paniculta (chiming bells) — for joy in physical existence.

Myrica gale (sweet gale) — for decrystallizing old emotional energy patterns.

Picea mariana (black spruce) — for realizing the cyclic nature of existence and learning from one's past experiences.

Polygonum alaskanum (wild rhubarb) — for mental flexibility; clearing the channel between the heart and mind.

Populus balsamifera (balsam poplar) — for release of pain and tension associated with sexual issues.

Potentilla fruticosa (tundra rose) — for being motivated by love of life.

Pyrola secunda (one-sided wintergreen) — for understanding resonance; becoming aware of how one's energy affects others.

Rosa acicularis (prickly wild rose) — for courage and faith in the experience of difficulties.

Salix bebbiana (willow) — for removing resistance to conscious expression.

Sanguisorba stipulata (Sitka burnet) — for healing the past; completion.

Shepherdia canadensis (soapberry) — for release of constrictions around the heart associated with a fear of the power of nature; for preparing for and opening to intense experiences in nature.

Sphagnum species (sphagnum moss) — for releasing judgment from the heart; learning to see with unconditional love.

Taraxacum officinale (dandelion) — for help in integrating emotional blockages.

Typha latifolia (cattail pollen) — for courage during emergence; standing tall in one's truth.

Vaccinium uliginosum (bog blueberry) — for being receptive toward life. (Blueberry pollen essence is for releasing deep patterns of limitation.)

Viola species (blue elf viola) — for dissipating energy charges resulting from unresolved conflicts.

FOR MORE INFORMATION

To obtain essences and educational information on essence preparation and use, contact the Alaskan Flower Essence Project, 1153 Donna Drive, Fairbanks, Alaska 99712.

Additional Sources of Flower Essences include: Pacific Essences, Box 1624 Station E, Victoria, B.C., V8W 1Y0 Canada; Flower Essence Society, P.O. Box 459, Nevada City, California 95959.

TREATMENT OF ACUTE POISONING

GET IMMEDIATE MEDICAL TREATMENT

If it is impossible to obtain medical help, or if there will be significant delay in getting the patient to medical facilities, it will be necessary to administer home treatment. For most plant poisonings (including poison or water hemlock, monkshood, baneberry, and false hellebore), **induce vomiting at once**.

DO NOT INDUCE VOMITING IF:

1. The patient is **unconscious or having convulsions**.

2. The patient has been poisoned by **oxalates or oxalic acid** (such as rhubarb leaves or high concentrations of dock). First-aid treatment, in this case, involves giving the patient large quantities of milk, yogurt, or other high-calcium fluids. Calcium carbonate antacids (such as Tums) can also be given, along with water. The more tablets given, the more water.

HOW TO INDUCE VOMITING

1. **Syrup of ipecac** is a commercial emetic that many families keep in their medicine cabinet. It is available in pharmacies without a prescription. Dosage: *Adult* — 30 milliliters (2 tablespoons) syrup of ipecac. *Child* (1 to 10 years old) — 15 milliliters (1 tablespoon) syrup of ipecac. For children under 1 year of age, consult a physician.

After administering syrup of ipecac, give 4 to 8 ounces water or other fluid. Keep the patient walking until vomiting occurs. Small children can be shaken gently to activate the fluids. If the patient remains still, vomiting may not readily occur. After 15 minutes, stimulate the patient's throat with a clean finger to encourage vomiting.

Vomiting should occur within 30 minutes.

2. If syrup of ipecac is not available, **use your finger** (short fingernails, please!) to stimulate the back of the patient's throat and provoke the gag reflex.

NOTE: Mustard and salt solutions are **not** recommended for inducing vomiting, as they may cause more harm than good. Children have died from taking concentrated salt solutions.

ASSOCIATIONS AND PLANT SOCIETIES

Alaska Mycological Society, P.O. Box 2526, Homer, Alaska 99603
Alaska Native Plant Society, P.O. Box 141613, Anchorage, Alaska 99514
www.aknps.org
American Herbalist Guild, P.O. Box 230741, Boston, Massachusetts 02123
www.americanherbalistsguild.com
American Herb Association, P.O. Box 1673, Nevada City, California 95959
www.ahaherb.com
Kenai Peninsula Botanical Society
groups.google.com/group/kpms
United Plant Savers, P. O. Box 400, East Barre, Vermont 05649
www.unitedplantsavers.org

HERB SUPPLIERS

Seeds

Abundant Life Seeds, P.O. Box 157. Saginaw, Oregon 97472
www.abundantlifeseeds.com
Baldwin Seed Company of Alaska, Richard Baldwin, P.O. Box 3127, Kenai, Alaska 99611 (Alaska wildflower seeds and planting instructions)
Seeds of Change P.O. Box 15700 Sante Fe, New Mexico 87506
www.seedsofchange.com (organically grown and heirloom seeds)

Herbal Products and Supplies

Alaska Flower Essence Project, P.O. Box 1090, Victor, Montana 59875
www.alaskanessences.com
Herb Pharm, P.O. Box 116, Williams, Oregon 97544
www.herb-pharm.com
The Wild'Erb Company, Ohio Valley Herbal Products, Inc. 125 Saint George Street, Suite 5, East Liverpool, OH 43920
www.thewilderbcompany.com
Jean's Greens, 1545 Columbia Turnpike, Schodack, NY 12033
www.jeansgreens.com (herbs, supplies, containers, essential oils)

HERB SCHOOLS AND CLASSES

California School of Herbal Studies, 9309 California 116, Forestville, California 95436 www.cshs.com
Sage, Rosemary Gladstar, P.O. Box 420, East Barre, Vermont 05649
www.sagemt.com
Southwest School of Botanical Medicine, P.O. Box 64063, Tucson, Arizona 85728
www.swsbm.com
Sweetgrass School of Herbalism, Robyn Klein, 6101 Shadow Circle Drive, Bozeman, Montana 59715

GLOSSARY

Agar — an algal extract of red seaweeds, used in industry.

Aggregate — a dense cluster; a fruit, such as a raspberry, with a mass of drupelets.

Alga **(plural, *algae*)** — any of a number of chlorophyll-containing organisms that live in fresh or salt water. Algae may be one-celled or many-celled, such as those plants we commonly call "seaweed."

Alginic acid — an algal extract of brown seaweeds, used in industry.

Alkaloid — a nitrogen-containing organic compound that is insoluble in water.

Alterative — an agent that produces gradual bodily changes of a beneficial nature.

Alternate — a leaf arrangement in which leaves occur singly on alternate sides of the stem (compare with opposite).

Analgesic — an agent that relieves pain.

Anemia — a disease characterized by a deficiency of red blood cells or hemoglobin.

Annual — a plant that completes its life cycle in one year.

Anodyne — an agent that relieves pain.

Anther — in a flower, the part of the stamen that bears pollen.

Antiseptic — an agent that kills or inhibits growth of harmful bacteria.

Antispasmodic — an agent that relieves cramps.

Aphrodisiac — an agent that stimulates sexual desire.

Aromatic — an herb with a fragrant smell (and often, a spicy flavor).

Arteriosclerosis — a disease characterized by hardening of the arteries.

Arthritis — a disease characterized by joint inflammation.

Ascarids — nematode worms, such as roundworms and pinworms, which are common intestinal parasites.

Ascorbic Acid — vitamin C.

Asthma — a respiratory disorder characterized by breathing difficulty.

Astringent — an agent that contracts body tissues, reducing discharges.

Attar — a perfume obtained from flowers, especially roses.

Bactericide — an agent that kills bacteria.

Basal leaves — leaves that are clustered at the bottom of a stem.

Bipinnate — leaves that are pinnately divided two times.

Bisexual — a plant having both male and female organs.

Blade — the expanded portion of a leaf; also, the leaflike frond of a seaweed.

Blanch — to dip briefly in boiling water.

Brachycardia — a disease (also called bradycardia) characterized by an abnormally slow heartbeat.

Bract — a modified leaf located near a flower or flower cluster.

Bronchitis — a lung disease characterized by inflammation of the bronchial tubes.

Cambium — the layer of plant tissue between the outer bark and the inner wood.

Capitate — a headlike flower cluster.

Capsule — a fruit that contains two or more seeds. When dry, it splits open.

Caries — tooth decay.

Carminative — a substance that relieves gas.

Carpel — the central organ of a flower, which bears ovules.

Carrageenin — an algal extract of red seaweeds, used as a stabilizer and emulsifier.

Catarrh — a disease characterized by inflammation of mucous membranes.

Catkin — a male or female, drooping, spikelike cluster of flowers.

Cauline — pertaining to the stem.

Cespitose — growing in dense tufts.

Chilblain — a disease caused by cold, characterized by hand and foot inflammation.

Chlorophyll — the green, photosynthetic pigment found in plants that enables them to convert water and carbon dioxide into carbohydrates.

Cirrhosis — a liver disease characterized by decreased regeneration of liver cells and increased growth of fibrous connective tissue, often caused by excess alcoholic consumption.

Cleft — divided halfway to the base.

Cleistogamous — a self-pollinating flower that is fertilized while in the bud stage.

Composite — flowerheads made up of both disk and ray flowers, characteristic of the composite family.
Compound leaf — a leaf that is divided into two or more leaflets.
Compress — a cloth or towel that is soaked in an herbal infusion or decoction, wrung out, and applied to an area of the body.
Conceptacles — depressions (such as those in the inflated tips of *Fucus*) in which the organs bearing gametes are located.
Cone — the dry fruits of certain plants, such as spruce, consisting of overlapping scales.
Conifer — a tree that bears cones.
Copperas — iron sulfate; a substance used to set colors of natural dyes.
Corm — a thick, bulblike stem base.
Corolla — the collective name for the flower petals.
Corymb — a flat-topped (or convex) flower cluster; a type of raceme.
Cotyledon — the first leaves that appear when a seed germinates.
Counterirritant — an agent that sparks irritation in one area of the body to counteract irritation in another part.
Crozier — bishop's staff; synonym for fiddlehead.
Culm — stem of a rush, sedge, or grass.
Cyme — a flat-topped (or convex) flower cluster in which flowers at the apex or center bloom first .
Cyst — a bladderlike sac containing a liquid or semisolid substance.
Cystitis — a disease characterized by bladder inflammation.
Cytokinin — a growth hormone important in protein metabolism.

Decoction — an herbal preparation made by boiling an herb in water. Decoctions are often used with bark, roots, and seeds and other hard plant materials.
Decumbent — a stem that reclines on the ground and rises up at the end.
Demulcent — a substance that soothes mucous membranes and other irritated tissues.
Dermatitis — a disease characterized by inflammation of the skin.
Diabetes — a disease characterized by high sugar levels in the blood and urine.
Diaphoretic — a substance that increases perspiration.
Dichotomous branching — division into two nearly equal sections.
Disk flowers — tubular flowers typically found in the central part of composite flowerheads.
Diuretic — an agent that increases urine excretion.
Doctrine of Signatures — a European teaching of the 1600s, which associated the shape of a plant part with the plant's healing properties.
Dropsy — a disease characterized by excess fluid in the body tissues.
Drupe — a fleshy fruit containing one seed.
Drupelet — a small drupe, such as one segment of a trailing raspberry.
Dysentery — a disease characterized by bloody diarrhea.
Dyspepsia — a disease characterized by poor digestion, often accompanied by heartburn.

Eczema — an inflammatory skin condition characterized by numerous lesions.
Edema — a disease characterized by excessive water retention.
Embrocation — a liniment or lotion.
Emetic — an agent that sparks vomiting.
Emollient — a substance used to soften and soothe tissues.
Entire — leaf margins that lack teeth or indentations.
Epilepsy — a nervous system disorder characterized by convulsions and seizures.
Epiphyte — a plant that grows on another in a nonparasitic manner.
Epithelization — the production of protective tissues, such as the epidermis.
Estrogen — a female hormone.
Evergreen — a plant that bears green leaves year-round.
Expectorant — an agent that promotes the discharge of mucus.

Family — in taxonomy, a group of related genera.

Fibroids — a disease characterized by smooth muscle tumors.
Fiddlehead — tightly coiled spring growth form of ferns.
Follicle — a single-chambered fruit that splits down one side to release seeds.
Fomentation — an herbal compress, usually prepared by dipping a cloth in hot tea and applying to painful areas.
Formula — an herbal blend. Herbs are often blended together to increase palatability and minimize side effects of potent plants.
Frond — the leaflike blade of an alga; also synonymous for a fern leaf.
Fungus **(plural,** ***fungi*****)** — any member of a group of organisms that lacks chlorophyll, reproduces by spores, and has a threadlike vegetative stage. Fungi include mildews, molds, and mushrooms.

Gamete — a sexual reproductive cell that merges with another sexual reproductive cell in the process of forming an organism.
Gastritis — a disease characterized by stomach inflammation.
Genus **(plural, genera)** — a group of related species.
Glabrous — smooth, devoid of hair.
Glycoside — a plant substance that breaks down to a sugar and other compounds when hydrolyzed.
Goiter — a disease characterized by enlargement of the thyroid gland.
Gout — a disease characterized by painful joint inflammation, especially in the foot or knee.

Hemostatic — an agent that stops bleeding.
Hepatitis — a disease characterized by liver inflammation.
Herb — technically, a flowering plant with a stem that does not become woody and persistent. Often used loosely to refer to plants used for seasoning, medicine, or cosmetics.
Herpes — a skin disease characterized by clusters of blisters.
Hip — the fruit of a rose.
Holdfast — an organ that anchors a seaweed to rocks and other surfaces.
Homeopathy — a branch of medicine based on the "law of similars": minute quantities of specially prepared substances eliminate symptoms that the substances (given on a large scale) would otherwise cause in a healthy person.
Hybrid — a cross between species.
Hypoglycemia — a disease characterized by low blood sugar levels.

Incised — leaves with sharp, irregular indentations.
Inflorescence — a flower cluster.
Infusion — an herbal preparation made by pouring boiling water over a quantity of herbs steeping to extract the active ingredients; an herbal tea.
Internode — the space between nodes.
Intertidal zone — coastal land that is alternately covered and exposed by tidal action.

Jaundice — a blood disorder characterized by yellowing of the skin.

Laxative — an agent that promotes bowel evacuation.
Leaching — a method of preparing plants, such as lichens, for consumption by flushing repeatedly with water.
Leaf axil — the angle between the upper surface of a leaf and stem to which it is attached.
Leaflet — one segment of a compound leaf.
Lichen — a composite plantlike structure consisting of a fungus living together with an alga in a mutually beneficial relationship.
Liniment — an alcohol-based external preparation used as a rub for strained muscles.
Lobe — a rounded section, as of a leaf.
Loment — a pod with indentations between the seeds.

Margin — the edge of a leaf. Margins may be entire, lobed, serrated, incised, etc.
Mastitis — a disease characterized by breast inflammation.
Microphylls — leaflike outgrowths of the epidermal layer of a plant, such as the "leaves" of club moss.

Midrib — the central portion of a leaf or seaweed blade.
Mononucleosis — a viral disease characterized by enlargement of the lymph nodes and spleen.
Mordant — a substance that sets natural dyes and makes them colorfast.
Moss — small green plants with leafy stems that bear spores in cases. Mosses often grow in dense clusters, forming velvety cushions.
Mucronate — a leaf with a toothlike tip.
Mushroom — the fleshy fruiting body characteristic of many fungi.
Muskeg — a bog habitat.
Mycelium — the underground network of threads through which fungi obtain nutrients from their substrate.
Mycology — the study of fungi.
Mycorrhizal symbiosis — the mutually beneficial relationship occurring between fungi and the rootlets of trees and shrubs.

Nectar — a plant secretion used by bees for honey-making.
Nephritis — a disease characterized by kidney inflammation.
Node — the location on a stem where a leaf or leaves occur.

Opposite — a leaf arrangement in which two leaves are arranged across from each other on a stem, i.e., in pairs.
Ovary — the part of the pistil of a flower that contains the seeds.
Ovules — plant structures that become seeds after fertilization.

Palmate leaf — a leaf in which the lobes spread outward from one point at the base.
Panicle — a compound flower arrangement in which younger flowers are at the top or center.
Parasite — an organism that derives nourishment from another living organism.
Parching — a method of preparing foods, such as some seeds, for consumption by thorough drying or roasting.
Peat — partially decayed vegetative matter (often moss). Peat is usually harvested from marshes, and cut and dried for fertilizer or fuel.
Peduncle — a flower stalk.
Pemmican — a concentrated food, prepared by mixing dried meat, dried berries, and hot fat.
Perennial — a plant that lives for more than two years and usually flowers each year.
Peristalsis — wavelike contractions that propel matter through tubular muscular organs.
Petiole — a leaf stalk.
Phlebitis — a disease characterized by vein inflammation.
Phloem — tissues responsible for transport of plant-synthesized nutrients.
Photosynthesis — the process by which plants convert solar energy into carbohydrates.
Pinnate — a compound leaf with leaflets arranged on two sides of a stem or long axis.
Pistil — the female, seed-producing organ of flowers.
Pistillate — flowers that have pistils and lack stamens.
Pith — the spongy tissue in the center of a stem.
Pollen — the reproductive spores produced by male plant organs.
Pome — a fleshy fruit, such as an apple.
Post partum — relating to the period of time following childbirth; after delivery.
Potherb — a cooked vegetable.
Poultice — an external herbal preparation made by crushing or bruising plants and applying them warm or hot (usually wrapped in cloth) directly to the skin.
Prolapse — the falling down of a part or organ, such as the uterus from its proper position.
Propolis — bee glue; a resinous substance collected by bees from buds and flowers and used in constructing their hives.
Proud flesh — granulation tissue; swollen flesh around a wound.
Pruritus — a disease characterized by itchy skin.
Psoriasis — a disease characterized by chronic skin inflammation.
Pubescent — a term used to describe soft, short plant hairs.

Purgative — an agent that sparks bowel evacuation.

Pyorrhea — a disease characterized by inflammation of the gums, and often leading to loss of teeth.

Raceme — a flower arrangement in which individual flowers have stalks and are attached to an elongated axis or stem. Flowers in a raceme bloom from the base upward; that is, youngest flowers are at the top, as in a fireweed blossom.

Radium — a radioactive, metallic element.

Ray flowers — strap-shaped flowers typically found in the margins of composite flowerheads.

Receptacles — the enlarged end of a flower stalk to which the other floral parts are attached; also used to describe the inflated bladders of *Fucus*.

Refrigerant — an agent that lowers body heat.

Rennet — a substance used to curdle milk for cheese-making, extracted commercially from the lining of a calf's stomach.

Resolvent — an agent that reduces inflammation.

Rheumatism — a disease characterized by stiffness, especially in the back and joints.

Rhizoid — a rootlike appendage that serves as an anchor for mosses and lichens.

Rhizome — underground plant stems that produce roots below and send shoots upward.

Rootstock — synonymous with rhizomes; sometimes loosely used to describe any underground plant structure.

Rosette — dense cluster of leaves arranged in a circular fashion.

Rubefacient — an agent that has an irritant effect and reddens the skin.

Saprophyte — an organism that derives nourishment from dead or decaying matter.

Scabies — an infectious skin disease caused by a parasitic insect.

Scabrous — a surface that is rough to the touch.

Scape — a flowering stem that only has leaves at its base.

Scurf — scaly crust, as the coating on soapberry leaves.

Scurvy — a vitamin C deficiency disease characterized by bleeding gums.

Sedative — an agent that soothes nervousness.

Selenium — a nonmetallic element absorbed from the soil by some plants.

Sepal — a modified leaf, generally green in color, that encloses the flower bud.

Septate — divided into compartments separated by partitions.

Serrated — marginal leaf teeth that are directed forward, toward the leaf tip.

Sessile — leaves or flowers that lack a stalk and attach directly to a stem.

Shrub — a woody perennial plant smaller than a tree, often with several main stems.

Silicle — a short pod characteristic of some mustards.

Silique — an elongated pod characteristic of some mustards.

Sitz bath — a method of bathing that covers the hip region, especially used for genitourinary and lower abdominal difficulties.

Sorus **(plural *sori*)** — a cluster of spore cases on a frond.

Spadix — a floral spike with a thick, fleshy axis.

Spathe — a modified leaf that encloses a spadix or flower cluster.

Species — a group of plants that interbreed freely and have many characteristics in common.

Spike — a flower cluster in which sessile flowers are arranged on an elongated stem or axis, with the youngest flowers at the top.

Sporangium — a spore case.

Spore — a reproductive unit, usually single-celled, common to fungi, ferns, and some other plants.

Sporophyll — a leaf that bears spores.

Stamen — a male pollen-bearing organ in a flower.

Staminate — flowers that have stamens and lack pistils.

Stigma — the part of a pistil that receives pollen.

Stimulant — an agent that quickens body processes.

Stipe — the stemlike portion of a seaweed such as bull kelp, to which the blades are attached.

Stipule — a modified leaf located at the base of a leaf or leaf stalk, often united.
Stolon — a stem that trails along the ground; a runner.
Strobilis — a cluster of modified leaves arranged on an axis, such as the "head" of fertile horsetails.
Style — the portion of the flower connecting stigma and ovary.
Styptic — an agent that stops bleeding by causing body tissues to contract.
Subtidal zone — the coastal region that is constantly covered by the tides.
Succulent — a plant with fleshy stems or leaves that store water.
Suppository — a mass of medicinal material, often inserted into the anus.
Symbiosis — the condition in which two dissimilar organisms join together for mutual benefit.

Tannic Acid — see tannins.
Tanning — the process of converting animal hide into leather.
Tannins — substances in plant tissues that protect plants from infection; they are indigestible to humans and act on human tissues as astringents. They are used to tan animal hides.
Tempeh — a high-protein food made from cooked fermented soybeans.
Terete — circular in cross-section.
Thallus — plant body, such as that of a lichen or alga, that lacks true leaves, stems, and roots.
Thujone — an aromatic terpine ketone present in many essential oils.
Tincture — an herbal preparation made by steeping an herb in vinegar or alcohol (brandy or vodka).
Tofu — a high-protein food made from curdled soybean milk.
Tree — a woody perennial plant of considerable size when mature, usually with one main stem.
Tripinnate leaf — a leaf that is pinnately divided three times.
Tuberculosis — an infectious disease that often affects the lungs.
Tundra — a treeless region in Arctic areas, whose soil is black and mucky and whose subsoil is frozen.

Ulcer — a disease characterized by body sores, usually on the stomach or intestines.
Umbel — an umbrella-shaped flower cluster in which all the flowers arise from one point.
Unisexual — a plant having stamens or pistils but not both.
Urethritis — a disease characterized by inflammation of the urethra.

Vascular plant — a plant having a cellular network that conducts water, mineral salts, sugars, and other nutrients.
Vermifuge — an agent that expels intestinal worms.
Volatile oils — oils that evaporate (some plant toxins, such as those of marsh marigold, evaporate when subjected to boiling temperatures).

Whorl — three or more leaves arranged around a stem.
Winnow — separating grain from chaff by throwing it into the air.

Xylem — plant tissues responsible for transporting water upward.

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Index

References to drawings and color photographs are printed in boldface type. Numbers in italics and followed with an *R* refer to plant recipes for food dishes, massage oils, herbal baths, tinctures, herbal teas, and plant dyes.

Abrasions. *See* Wounds
Aches, 49, 68, 109, 129, 132, 135, 141, 144, 149, 214, 215, 246, 304, 313, 319
Achillea, **318-321, 319**
Achilles, 318
Acid kelp, **250-252**
Acids/alkali, tests for, 52, 225
Acne, 7, 9, 35, 68, 76, 135, 226, 309
Aconitum, **167**-169, **168**
Actaea rubra, **77-78**
Afterbirth, to expel, 128
Aging, to inhibit, 37, 86
Alaria, **264**-265
Alaskan rhubarb, 224-**226**, **225**
Alcohol, to decrease desire for, 130
Alcoholic beverages, 21, *22R,* 63, 85, 130, 213, 247, 259
  beer, 19, 22, 42, 63, 72, 112, 137, 157, 214, 285, 295
  cordials, *19R* , 24, 36, 37, 55, 80, 94, 100, 130, 153, 174, 278, 279
  wine, 19, 24, 32, 81, 92, 94, 123, 137, 146, 153, 174, 179, 231, 292, 295
Alder, **58**-60, **59**
Aleut. *See* Eskimo, Aleut
Algae, 250-267
Allergies, plants causing, 22, 64, 70, 118, 142, 183, 193, 310
Allium, **184-187, 185**
Alnus, **58**-60, **59**
Alpine bistort, 224-**226**, **225**
Alteratives, 172
Alum root, **192-193**
Amelanchier, **230**-232, **231**
American dogwood, **82**-84, **83**
American veronica, **6-7**
Amulets, 89, 114, 130, 150, 215
Analgesics, 68, 76, 88
Ancient plants, 17, 108, 254, 297, 302, 306
Andromeda polifolia, 20, 22
Anemia, 32, 172, 179, 186, 239, 251, 259, 285, 296
Angelica, **128**-130, **129**
Anodynes. *See* Pain, relief of
Anti-aphrodisiacs, 47, 54
Antibacterial plants, 179, 218
Antibiotics, 37, 221, 223
Anti-inflammatory plants, 75, 304, 320
Antioxidants, 68
Antiseptics, 24, 35, 44, 68, 73, 75, *76R,* 80, 94, 162, 182, 183, 186, 193, 218, 316
Antispasmodics, 32, 36, 39, 43, 91, 156, 172, 195
Anti-tumor agents, 246
Aphids. *See* Insects
Aphrodisiacs. *See also* Bath herbs, aphrodisiac 37, 105, 141, 159
Appetite, to stimulate, 9, 17, 80, 83, 86, 130, 153, 214
Appetizers, 142, 206, *207R*
Aquilegia, **140**-141
Arabis lyrata, 314-317, **315**
Arctic chamomile, **303**-305
Arctostaphylos, **217-219**
Arenaria peploides, 271
Arnica, **131**-132
Aromatics, 22, 40, 42, 44, 244, 247, 278, 293
Arrow grass, 266-**270**, **268,** 306, 310
Arrow grass family, 268, 269
Art, canvas substitute, 118
  flowers in, 54,124, 205
Artemisia, **244**-247, **245**
Arteriosclerosis, 86, 150
Arthritis, 21, 49, 65, 68, 72, 88, 172, 179, 183, 195, 292, 309, 320
Arum family, 38, 39, 48
Ascarids. *See* Worms
Asthma, 7, 17, 37, 39, 91, 156, 172, 195, 196, 309
Astral projection, to stimulate, 219
Astringents, 11, 14, 21, 24, 29, 41, 59, 63, 80, 83, 97, 137, 159, 162, 183, 225, 313
Athlete's foot, 193, 199, 247, 292
Athyrium filix-femina, **111**-114, **113**
Atriplex, **280**-282, **281**

Babies. *See* Infants
Back pain, 32, 72, 132
Bacteriocides, 132, 280
Baking powder, substitutes for, 69
Baldness, 172, 320
Balm of Gilead, 68, *68R,* 69
Balsam poplar, **67-70, 69**
Baneberry, **77-78**

Barbarea orthoceras, 314-317, **315**
Bark, edible, 63, 65, 68, 72, 75
Barter, 17, 92, 141, 232, 240
Basketry, 11, 15, 64, 72, 76, 114
Bath herbs, *60R*, 97, 124, 130, 153, 162, 165, 175, 257, 292, 299, 304-305
aphrodisiac, 44, 112, 159
arthritis/rheumatism, 59, 88, 172
beauty, 66, 124, 147, 180, 183, 195, 305
childbirth, *218R*
deodorant, 279
insomnia, 44, 66
skin ailments, 9, 59, 64, 72, 309
soothing, 7, 130, 153, 180, 199, 290, 320
sore muscles, *49R*, 72, *72R*, 215, 246, 305
stimulating, 159, 172, 317
Beach greens, **271-272**
Beach pea, **273**-274
Bearberry, **217-219**
Bear root, **210**-212, **211**
Bear's head, 115-**119**, **116**
Bedding
for animals, 35, 114
for camping, 11, 66, 72
Bedstraw, **133**-135, **134**
Bedwetting, 218
Beer. *See* Alcoholic beverages, beer
Bees. *See* Insects
Benzoic Acid, 25
Betula, **61**-64, **62**
Beverages. *See also* Alcoholic beverages 17, 97, *100R*, 146, 174, 182, 296
lemonade substitutes, 94, 218, 235, 238
Bible, 69, 74, 224, 244, 317
Birch, **61**-64, **62**
Birch family, 58, 61,
Birds
feed for domestic birds, 276, 290, 309, 313, 317
nesting cover for, 12, 15, 196
plants to attract, 17, 19, 23, 27, 29, 55, 64, 81, 141, 180, 181, 199, 217, 226, 232, 233, 282, 309, 317
Bistort, 224
Bittercress, 283-285, **284**
Bitters, 8, 59, 244, 245
Bladder ailments, 65, 76, 110, 134, 162, 179, 214, 218, 289, 298
Bladderwrack, **253**-254
Bleeding, to stop, 11, 30, 39, 75, 117, 122, 136, 137, 159, 160, 161, 175, 192, 225, 240, 298, 312, 318, 319
internal, 27, 59, 114, 122, 137, 160, 161, 172, 225, 312
Blemishes, skin. *See* Complexion, to improve
Blisters, 29, 35, 226, 309
Blood
disorders, 239, 281, 292, 295, 319
poisoning, 129, 308
pressure, 257, 279, 296, 312
Blood sugar, 80, 89
Blueberry, **79-81**
Blue flag, 50
Boats, 64, 72, 73
Bog cranberry, 16
Bog laurel, 20, 22
Bog rosemary, 20-22, **21**
Boils, 53, 63, 88, 114, 147, 157, 240, 290
Bone-joint ailments, 214, 254
Borage family, 7, 100
Boschniakia rossica, **104**-105
Bowels, to regulate, 80, 86
Bracken fern, 111, 114
Brassica, 314-317, **315**
Bread, plants for making, 10, 11,14, 68, 161, 172, 174, 278, 280, 289, 301, 308
biscuits, 11, 80, 161
muffins, 11,18, 24, 80, 231
nutbreads, 17, 24, 80
Breasts, 47, 180, 289, 292
Breath
to freshen, 64, 72, 114, *122R*, 130
shortness of, 195
Bronchial problems, 7, 32, 43, 196, 221, 223, 304, 309
Bronchitis, 7, 37, 68, 72, 195, 298
Broomrape, family, 104, 105
plant, 39, **104**-105
Brooms, plants to make, 64
Brown algae, 250, 253, 255, 264
Bruises, 41, 51, 124, 132, 186, 240, 246, 320
Buckbean, **8**-9
Buckwheat family, 224, 237
Buffaloberry, 235-236
Bull kelp, **255**-257, **256**
Bulrush, **13**-15, **14**
Bunchberry, **82**-84, **83**
Burgers, lovage, *279R*
Burnet, **136-137**

Burns, 11, 68, 72, 86, 114, 147, 172, 228, 289, 292, 308
Butter
covering for, 196
to flavor, 178, 186, 238
substitutes for, 212

Cakes
clam, *29R*
decorations, 123, 153
desserts, 17, 18, 91, 145, 174, 179, 292
Indian, 11, 65, 72, 81, 86, 94, 98, 146, 231, 240
Cakile edentula, **283**-284
Calla palustris, **48-49**
Calluses, 153
Caltha, **31-33**
Calvatia, 115-**119**
Cancer
plants causing, 111, 114
prevention, 87
treatment of, 117, 124, 134, 241, 246, 292, 298, 299, 319
Candlemaking
molds for, 257
wax substitutes, 41, 42
wick substitutes, 15
Candy, 123, 128, 174, 179, 243, 256
Caning, 11, 15
Capers, 32
Capsella, **311-313**
Captain Cook, plants used by, 72
Cardamine, 283-285, **284**
Carex, **13**-15, **14**
Carminatives. *See also* Gas, to relieve 278
Carnivorous plants, 36
Casseroles, 6, *7R*, 14, 53, 112, 124, 136, 139, 142, 156, *157R*, 158, 194, 201, 204, 225, 228, 238, *240R*, 242, 259, 262, 267, 278, 280, 284, 289, *293R*, 301, 303, 308, 311, 316
Cataracts, 19
Catarrh, 39
Cats, plants to attract, 44
Catsup, 24, *91R*
Cattail, **4**, 10-12, **10, 11**
Cattail family, 10
Cattle. *See* Livestock
Caulking, 11
Celery, substitutes for, 142
Cereal, 53, 100, 172, 178, 215, 239, 280, 289, 312
topping for, 80, 85, 97
Cervix, ulcerations of, 218
Cetraria islandica, **220**-223, **222**
Cheese, to flavor, 293
Chenopodium, **300**-302, **301**
Chickweed, **288**-290, **289**
Chilblains, 35
Childbirth, 128, 175, 218, 246, 304, 312, 319
Children, plants for, 303
Chiming bell, **106-107**
Chinking, 35
Chocolate lily, **138**-139
Cholesterol, to lower, 296
Cicuta, **46**-47
Cinquefoil, 28, 30
Cirrhosis, 109, 296
Cladina rangiferina, **220**-236, **222**
Cladonia rangiferina, 220
Claytonia, **206-207**
Cleavers, **133**-135, **134**
Cloudberry, 99-**101**, **100**
Clover, **291-293**
Club moss, **108-110**, **109**, 193
Club moss family, 108
Cochlearia officinalis, **283**-285
Coffee, substitutes, 51, 94, 134, 165, 269, 295, 301
Colds, 14, 17, 19, 21, 39, 41, 49, 65, 68, 72, 83, 86, 88, 92, 114, 122, 143, 146, 147, 179, 189, 215, 228, 240, 245, 246, 260, 304, 316, 319
Colic, 130, 303
Coltsfoot, **194-197**, **195, 196**
Columbine, **140**-141
Companion plants, 64, 173, 183, 186, 247, 305, 321
Complexion, to improve. *See also* Facial steams
9, 17, 32, 51, 64, 68, 76, 105, 124, 147, 159, 195, 265, 299, 313
Composite family, 31, 131, 161, 194, 244, 294, 303, 318
Compost, 35, 64, 114, 173, 251, 296, 321
Congestion, 41, 72, 317
Consciousness, to prevent loss of, 141
Constipation, 9, 15, 21, 88, 146, 156, 239, 296, 309
Convalescents, food for, 24, 80, 86, 259

Cordials, *See* Alcoholic beverages, liqueurs
Cork, substitutes for, 117
Corns, 254
Cornus, **82**-84, **83**
Cottongrass, **13**-15, **14**
Cottonwood, 67
Coughs, *See also* Syrups, cough
14, 32, 37, 72, 86, 122, 124, 156, 179, 195, 223, 234, 292
Counter-irritants, 65, 68, 77, 172
Cow parsnip, **142**-144, **143**
Cramps, 15, 32, 43, 86, 91, 109, 179
Cranberry, 16-17, **16**
Crêpes, 80, *162R*, *232R*, 301
Croup, 195
Crowberry, **18**-19
Crowberry family, 18
Crowfoot family, 31, 48, 77, 140, 167
Currant, **85**-86
Cuts, 11, 35, 39, 41, 59, 68, 88, 92, 94, 129
137, 162, 179, 193, 202, 228, 235, 308, 312
Cypress family, 213
Cystitis, 17, 134, 214
Cysts, 134, 299

Dandelion, **287, 294**-296, **295**
Dandruff, 64, 76, 112, 114, 153, 172, 215, 299
Death camass, **184**-187, **185**
Delphinium, **167**-169, **168**
Demulcents, 214, 219, 289
Dentinum repandum, 115-119, **116**
Deodorants, 153, 179, 246, 279, 305
Deodorizers, 244, 246
Dermatitis, plants causing, 32, 50, 52, 144, 149, **241**
Desmarestia, **250-252**
Detoxifier, 134, 240, 260, 265
Devil's club, **87**-89, **88**
Diabetes, 80, 88
Diaper material, 11, 35
Diaper rash, 68, 109, 193
Diaphoretics, 21, 141
Diarrhea, 19, 29, 41, 59, 63, 68, 94, 97, 137, 159, 175, 183, 193, 221, 225, 312
Diet, reducing. *See* Weight loss
Digestion. *See also* Stomach upset
disorders, 21, 32
to stimulate, 9, 24, 59, 130, 153, 186, 278, 316

Disinfectants, 186, 215
Diuretics, 9, 14, 21, 162, 296
Dock, **237**-241, **239**
Doctrine of Signatures, 285
Dogwood, 82-84
Dogwood family, 82
Douche, 17, 41, 54, 63, 122, 159, 175, 179, 183, 218
Dream pillows, plants for, 44, *45R*, 109, 124, 154, 180, 247, 305, 320
Dropsy, 110
Drosera, **36**-37
Dryopteris dilatata, **111**-114, **113**
Dulse, **258-260**
Dwarf dogwood, 82
Dye plants, 17, 24, 41, 52, 59, 76, 81, 92, 114, 117, 148, 163, 169, 173, 180, 193, 196, 200, 219, 222, 226, 240, 282, 299, 300, 302, 310
for fingernails, 199
for hair, 60, 64
Dysentery, 11, 97, 137, 159, 175, 183, 225
Dyspepsia, 296

Earache, 153, 205, 304, 309
Eczema, 7, 35, 109, 172, 183, 199, 308
Edema, 296
Egg dishes, *106R*, 107, *186R*, 251, 267, 275, 278, 280
omelettes, 87, 103, 112, 116, 123, 152, 177, 204, *228R*, 253, 259, 262, *276R*, 284, 289, 292, 295, 311, 315
quiche, 107, 159, *160R*, 185, 253, 262, 265, 289, 292
rolls, *137R*
Elaeagnus commutata, **233-234**
Elder, 62, **145**-148, **146**
Emetics, 9
Emollients, 124, 153, 214
Empetrum nigrum, **18**-19
Epidemics, 88, 215
Epilepsy, 43, 132, 150
Epilobium, **155**-157, **156**
Equisetum arvense, **297**-299, **298**
Eriophorum, **13**-15, **14**
Erosion, to check, 15, 165, 219
Eskimo, 13, 19, 23, 27, 29, 32, 59, 75, 80, 83, 98, 102, 128, 144, 195, 204, 221, 225, 228, 259, 319

Aleut, 9, 129, 143, 159, 160, 221, 240, 246, 279, 304, 319
Inuit, 81, 242
Inupiat, 14, 17, 19, 24, 74, 80, 100, 129, 156, 204, 212, 215, 228, 238, 242, 245, 271, 278
Estrogen, 147
Euphrasia, **188**-189
Evening primrose family, 155
Expectorants, 7, 32, 36, 68, 172, 223
Eyebright, **188**-189
Eyes
bags under, 195
black, 88
disorders, 19, 183
eyewash, 86, 109, 124, 146, 179, *189R*, 228
to strengthen, 43

Facial mask, *153R*
Facial splash, 22, 218
Facial steam, 22, 162, 165, 195, 296
for dry skin, 147, 153, 180
for improving complexion, 7, 9, 64, 68, 76, 159, 226, 240, 290, 299, 305, 309, 320
for oily skin, 24, 29, 83, 97, 105, 130, 175, 193, 260, 305, 313, 320, *320R*, **321**
False hellebore, **149**-151, **150**
Fatigue, 9
Feet. *See also* Footbaths
odor, 66, 247
plants for, 44, 109, 153, 246, 299, 317, 320
powder, 44, 66, 72, *132R*
Ferns, 111-114
Fever, 9, 29, 43, 63, 65, 68, 83, 110, 147, 150, 175, 179, 243, 246, 312, 319
Fibroids, 319
Fiddleheads, 111-114, **111**, *112R*
Field mint, **152**-154, **153**
Figwort family, 6, 7, 188, 201, 242
Fireweed, **155**-157, **156**
Fish, 55
bait, 81, 92, 282
lures, 89
smoking, 60
Flatulence. *See* Gas
Fleas. *See* Insects
Floral waters, *179R*
Flour substitutes, 221, 261
bark, 63, 65, 68, 72, 75
bulbs/rootstalks, 12, 14, 43, 49, 285
flowers/fruits, 94, 145, 292
pollen, 11, 14
seeds, 49, 53, 225, 239, 240, 271, 280, 292, 301, 312
Flower essences, 79, 106, 327-328
Flowers, for arrangements, 5, 12, 15, 98, 240
Flu, 41, 49, 65, 86, 193, 319
Fluid balance, 135, 214
Food poisoning, 21
Footbaths, 59, *60R*, 68, 72, 76, 89, 112, 124, 132, 147, 153, 183, 226, 246, 254, 296, 299, 313, 320
Fractures, bone, 88, 251, 257
Fragaria, **181**-183, **182**
Freckles, 29, 37, 105, 147
Frigidity, 154
Fritillaria, **138**-139
Fritters, 80, 91, 112, 116, 123, 145, 146, *147R*, 161, 186, 194, 292, 295, 301, *302R*
Frostbite, 12
Fruit leather, 17, 18, 85, *86R*, 174
Fucus, **253**-254
Fumigation, 215
Fungi, 115-119
mycorrhizal, 57, 118
Fungicides, 199

Galium, **133**-135, **134**
Gall bladder, ailments, 17, 296
gall stones, 88, 296
Gardening
bog areas, 6, 9, 12, 15, 27, 32, 37, 49, 52, 55, 269
fragrance, 137, 233, 292, 302
ground covers, 100, 205
herbal, 154, 186, 279, 281, 293, 295
ornamentals, 22, 27, 39, 40, 42, 44, 64, 70, 71, *78R*, 84, 89, 92, 93, 95, 98, 140, 144, 147, 148, *151R*, 157, 180, 199, 212, 216, 217, 219, 225, 226, 228, 232, 233, 234, 235, 274
pathways, 305
rock, 19, 84, 132, 141, 207, 227
wildflowers, 44, 125, 139, 141, 157, 160, 161, 163, 166, 169, 198, 202
Gargle, 7, 41, 54, 63, 64, 65, 72, 76, 80, 86, 94, 134, 159, 160, 175, 179, 183, 228, 240, 246

Garnishes, 153, 158, 206, 242, 271, 289, 308, 315
Gas, to relieve, 9, 80, 130, 144, 153, 214, 304
Gastritis, 296
Genital discharges, 137
Gentian family, 8
Geranium, **158**-160, **159**
Ginger, substitutes for, 312
Ginseng, Alaskan, 87
  woman's, 128
Ginseng family, 87
Glands, swollen, 9, 141
Glass, plants for making, 114, 276, 282
Glasswort, **275-276**
Glaucoma, 94
Goiter, 134, 251, 262, 265
Goldenrod, **161-163, 162**
Gonorrhea, 218
Gooseberry, **85**-86
Goosefoot family, 275, 280, 300
Goosetongue, **268,** 270, **306**-310, **307**
Gout, 21, 86, 109, 183, 281, 296
Green algae, 266
Gum, chewing, 11, 73
Gum problems, 9, 17, 29, 80, 122, 137, 159, 160, 182, 240, 246, 285

Hair, herbs for, 64, 112, 114, 132, 135, 153, 162, 172, 175, 199, 246, 260, 265, *299R,* 305, 309, 320
  conditioner, 7, 51, 68, 112, 299
  rinses for dry, 32, 147
  rinses for oily, 9, 24, 159
Harmony, plants for, 44
Harvesting basics, 322-324
Hay fever, 161, 163
Headache, 39, 43, 63, 68, 72, 75, 109, 153, 159, 179, 292, 304, 309, 320
Heart
  palpitations, 141
  tonics for, 175, 179, 226, 265
Heartburn, 21, 24, 130, 143, 246, 257
Heath family, 16, 20, 23, 79, 217
Hedgehog, 115-**119, 116**
Hedysarum, **210-212, 211**
Hemlock, **65-66**
Hemorrhage, 41, 137, 160, 225, 298
Hemorrhoids, 29, 35, 59, 68, 94, 147, 156, 159, 195, 199, 205, 225, 226, 308, 319, 320
Hemostatics, 59
Hepatitis, 134, 239, 292
Heracleum lanatum, **142**-144, **143**
Hercules, 69, **142**
Hericium, 115-**119, 116**
Herpes, 9, 109, 299
Heuchera, **192-193**
Highbush cranberry, **90-92**
Hippuris, **26-27**
Hives, 100, 172
Holidays, plants for celebrating, 24, 73, 108, 180, 231
Homeopathic remedies, 110, 132, 149-150, 168, 172, 189, 304, 325-326
Honckenya peploides, **271-272**
Honey, to flavor, 178
Honeysuckle family, 90, 145, 148
Hops, substitutes, 9, 42, 321
Hormones, 124
Hors d'oeuvres. *See* Appetizers
Horsetail, family, 26, 297
  plant, **297**-299
Hot flashes, 105
Huckleberry, **79-81**
Hydnum repandum, 115-119, **116**
Hypoglycemia, 80
Hysteria, 43

Ice cream, 80
  Indian, 235, *236R*
  topping for, 18, 179
Iceland moss, **220**-223, **222**
I Ching, 321
Impatiens, **198-200**
Impetigo, 309
Impotence, 105
Inadequacy, fears of, 110
Incense, 72, 124, 143, 149, 215, 247
Indian potato, **210-212, 211**
Indian rice, 138
Indians, plant lore of, 11, 17, 29, 39, 41, 47, 59, 72, 81, 83, 86, 89, 92, 97, 98, 110, 114, 130, 132, 139, 141, 146, 150, 157, 160, 165, 173, 180, 192, 202, 231, 232, 235, 240, 269, 280, 281, 292, 300, 305, 309
  Athabascan. *See also* Dena'ina 24, 49, 72, 124, 180, 210, 212, 246, 279
  Blackfoot, 110, 186, 199
  Carrier, 302
  Cheyenne, 77

Dena'ina, plant lore of, 19, 21, 24, 41, 60, 72, 76, 86, 92, 102, 105, 109, 129, 143, 147, 149, 172, 176, 179, 186, 196, 211, 215, 218, 221, 226, 228, 235, 246, 247, 298, 302, 304, 319
Gitksan, 65
Haida, 72, 87, 269, 318
Iroquois, 273
Klallam, 218
Klamath, 54, 231
Kwakiutl, 92
Lummi, 135
Makah, 135
Malecite, 92
Micmac, 39
Montagnais, 65, 110
Omaha, 141, 199
Penobscot, 92
Potawatomi, 110, 199
Quileute, 135
Skokomish, 157
Thompson, 77, 302
Tlingit, 50, 87, 89, 122, 251
Wailakis, 196
Yuki, 196
Yup'ik, 21, 100, 240, 245
Indigestion. *See also* Stomach, upset 130, 143, 154, 215, 239
Infants, 11, 35, 124, 211, 303, 304, 305, 319
Infection
to prevent, 72, 132, 218
to relieve, 88, 92, 159, 172, 246, 290, 292, 308, 317
Infertility, 105
Inflammation. *See also* Swelling 29, 59, 68, 69, 75, 86, 124, 172, 218, 290, 292, 299, 301, 304, 317
Insanity, 150
Insects
aphids, 148, 173, 186
bees, plants to attract, 52, 69, 157, 196, 199, 293
bites, 35, 59, 75, 88, 121, 157, 162, 195, 202, 240, 281, 290, 308
fleas, 41, 60, 244, 299
flies, 148, 247
insecticides, 151
lice, 41, 141, 149, 151, 168, 243, 299
mosquitoes, 42, 148, 186, 247, 313, 320
moths, 20, 22, 42, 76, 216, 246, 293
mounting base, 117
repellents, 64, 114, 148, 186, 305, 309
stings, 59, 75, 88, 186, 226, 240, 246, 281
Insomnia, 37, 43, 44, 63, 66
Insulation, 11, 12, 35
Intestinal difficulties, 15, 32, 94, 97, 159, 242, 273
Invalids. *See* Convalescents
Iris, **50**-52, **51**
Iris family, 50
Itchiness, 24, 41, 121, 149, 151, 153, 172, 199, 225, 240

Jam. *See* Preserves, jam
Jaundice, 134, 296
Jewelweed, **198-200**
Juice, 17, 24, 80, 178
Juneberry, 230
Juniper, **213-215, 214**
Juniperus, **213-215, 214**

Kalmia polifolia, 20, 22
Kidney ailments, 19, 65, 86, 121, 162, 179, 218, 289, 296, 298, 299, 312
stones in, 63, 162, 218, 298
Kinnikinnick, **217-219**

Labrador tea, **20**-22, **21**
Lady fern, family, 111
plant, **111**-114, **113**
Laetiporus sulphureus, **115-119**
Lamb's quarter, **300**-302, **301**
Laryngitis, 94
Lathyrus maritimus, **273**-274
Laxatives. *See also* Constipation 9, 21, 103, 105, 124, 156, 183, 218, 309, 317
Leather, preservation of, 64, 66
tanning, 29
Ledum palustre, **20**-22, **21**
Lepidium densiflorum, 314-317, **316**
Leucorrhea, 175
Lice. *See* Insects
Lichens, 220-223
Ligusticum, **277**-279, **278**
Lily family, 102, 138, 149, 184
Lingonberry, **23-25**
Liniments, 179, 246, 254, 317
antiseptic, 68, 75, 218
disinfectant, 24

sore muscle, 9, 22, 64, 66, 75, 89, 135, 144, 172, 179, 214, *246R*, 305
veterinary, 66, 214
Liqueur. *See* Alcoholic beverages, cordials
Liver, 7, 51, 109, 134, 239, 296
Livestock, feed for, 137, 144, 165, 173, 251, 254, 271, 273, 276, 282, 290, 293, 296, 302, 321
cattle, 23, 144, 165, 321
dietary supplements, 252, 254, 257, 317
poultry, 173, 186
sheep, 69
Lotion, 29, 32, 124, 147, 202, 290, 320
Lovage, **277**-279, **278**
Lowbush cranberry, 23
Lungs, 7, 32, 37, 39, *39R*, 107, 172, 195, 221, 254, 298, 309
Lupine, **126**, **164**-166, **165**
Lupinus, **164**-166, **165**
Lycoperdon, **115-119**
Lycopodium, **108-110, 109**
Lymph system, 51
Lysichiton americanum, **38**-39

Madder family, 133
Mange, 83, 149, 234
Mare's tail, **26-27**
Marinades, 21, *112R*, 213, *214R*
Marsh fivefinger, **28-30, 29**
Marsh marigold, **31-33, 32**
Massage oils, 7, 9, 72, 75, *130R*, 135, 141, 147, 153, *233R*, 240, 296, 309
sore muscle, 64, 66, 75, 89, 214, 305
Mastitis. *See* Breasts
Matricaria, **303**-305, **304**
Matteuccia struthiopteris, **111**-114, **113**
Mattress, 35, 114, 133, 216
Measles, 24, 43, 59, 114
Melancholy, 137, 154, 180, 216, 292, 320
Melilotus, **291**-293, **292**
Memory, 154
Menopause, 105, 319
Menstruation, 9, 35, 44, 75, 128, 159, 175, 179, 218, 245, 312, 320
cramps, 43, 91, 130, 147, 149, 153, 195, 303
irregular, 43, 153, 182, 319
supplements during, 172, 259
Mentha, **152**-154, **153**
Menyanthes trifoliata, **8**-9
Mertensia, **106-107**
Milk, 36, 133
Mimulus, **201-202**
Minerals
calcium, 24, 29, 152, 171, 174, 178, 182, 259, 265, 289, 294, 295, 298, 301, 315
copper, 86, 116, 289, 295
iodine, 9
iron, 9, 29, 80, 112, 116, 152, 171, 172, 174, 178, 182, 186, 239, 259, 263, 265, 267, 289, 295, 301, 312, 315
magnesium, 29, 174, 259, 265, 295, 298
manganese, 152, 171
phosphorus, 174, 178, 251, 259, 265, 289, 295, 301, 315
potash, 251
potassium, 112, 171, 182, 259, 265, 289, 295, 301, 312, 315
silica, 178, 298
sodium, 265, 276
sulfur, 29, 182, 265, 298, 312
Mint, 152-154
Mist maiden, **203**
Moneses uniflora, **120**-122, **121**
Monkeyflower, **190, 201-202**
Monkshood, **167**-169, **168**
Mononucleosis, 292, 296
Mordants, 110, 192, *192R*, 193
Morning sickness, 153, 175, 182
Moss, 34-35,
Mountain ash, **93-95, 94**
Mousenuts, 13-14
Mouthwash, 80, *122R*, 130, 137, 153, 240, 279, 301
Mumps, 92
Muscles, sore, 49, 72, 144, 304, 317, 319
Mushrooms. *See* Fungi
Musical instruments, 147, 148
Mustard
condiment, *316R*
family, 283, 311, 314
Myrica, **40-42, 41**
Mythology, 51, 125, 153, 245

Nagoonberry, **99-101**
Nasal problems, 41
congestion, 68, 246, 317
Nausea, 37, 130, 143, 153, 179, 205
Navels, infants, 11
Nereocystis luetkeana, **255**-257, **256**

Nerves
to calm, 43, 66, 130, 147, 292, 304, 312
to deaden, 143
spasms, 110
Nets, plants to make, 157, 172
Nettle, family, 170
plant, **170-173, 171**
rash, 112, 172, 199, 240, 308
Nightmares, to prevent, 44
Nitrogen, 60, 166, 251, 291
Nori, **261**-263, **262,** 319
Nosebleed, 110, 117, 225, 312, 321
Notecards, plants to press, *169R*
Nuphar polysepalum, **53-55, 54**

Odors, 42, 114, 154, 305
Oils, essential, 41, 64, 66, 69, 153, 173, 180, 214
Ointment, *See also* Salves
7, 39, 132, 147, 309
Oleaster family, 233, 235
Oplopanax horridum, **87**-89, **88**
Orach, **280**-282, **281**
Orobanche, 104-105
Ostrich fern, **111**-114, **113**
Ovaries, inflammation, 319
Oxycoccus, **16**-17
Oxyria digyna, **237**-241, **239**
Oysterleaf, **106-107**
Oysters, mock, *263R*

Packing material, 35
Pain, relief of, 11, 39, 49, 51, 68, 75, 88, 132, 141, 153, 175, 186, 195, 246, 304, 313, 317, 319
Paint, 89, 135
Palmaria, **258-260**
Pancakes, *See also* Crêpes
batter, 10, 14, 24, 80, 91, 97, *98R,* 100, 145, 161, 211, 215, 231
topping for, *84R,* 85, 179
Paper substitutes, 64, 173
Paralysis, 32, 143, 274, 285
Parasitic plants, 104, 105
Parsley family, 46, 128, 142, 277
Pasta, 32, 63, 65, 72, 75, *259R*
Pea family, 164, 210, 273, 291
Pectin
fruits high in, 16, 24, 83, 94, 174
fruits low in, 18, 178, 225, 231
Pedicularis, **242-243**
Pemmican, 19, 81, 231
Peppergrass, 314-317, **316**
Perfume, 41, 42, 69, 124, 130, 135, 180, 202, 221, 234
to decrease offense odors, 76
for linens, 42, 52, 180, 293
Perspiration, to increase, 319
Petasites, **194-197, 195, 196**
Picea, **71-73**
Pickles, 10, 32, 112, 117, 146, 156, *256R,* 271, 275, 284, 295, 316
Pies, 18, 24, *80R,* 85, 97, 174, 179, 182, *221R,* 230, 231, 239, 301
Piles. *See* Hemorrhoids
Pillows. *See also* Dream Pillows
filling for, 11, 12, *109R*
Pimples, 29, 193
Pineapple weed, **303**-305, **304**
Pine family, 65, 71
Pink family, 271, 288
Pink plumes, **224-226, 225**
Pipsissewa, 121
Plantago, **306-310, 307**
Plantain, family, 306, 310
plant, **306-310, 307**
Plaster, 316-317
Pneumonia, 150, 223
Poison hemlock, **46**-47
Poison ivy, 199
Poison plants. *See also* Cautions
treatment for ingestion, 329
Pollen, for flour, 11, 14
Pollutants, indicators for, 222
Polygonum, **224-226, 225**
Polyporus sulphureus, **115-119**
Popcorn
seasoning, 259
substitutes, 53, *55R*
Populus, **67-70, 69**
Porphyra, **67-70, 69**
Postpartal bleeding, 159, 279
Potash, garden supplements for, 114
Potato
chips, 259, 262
substitutes for, 11, 206, 211, *212R*
Potentilla, **28-30, 29**
Potherbs, 6, 22, 32, *32R,* 123, 134, 143, 146, 156, 158, 161, 165, *171R,* 172, 194, 198, 201, 204, 225, 228, 237, 242, 267, 271, 273, 275, 281, 284, 288, 292, 295, 301, 307, 308, 315

Potpourri, 22, 52, 124, 137, 154, 163, 166,*166R*, 169, 180
Potscrubbers, 298, 299
Poultice, plants for, 9, 32, 41, 51, 59, 68, 88, 114, 121, 124, 129, 135, 144, 147, 172, 175, 193, 195, 201, 226, 240, 246, 290, 292, 298, 299, 301, 304, 308, **310**, 317, 319
Poultry, *42R*, *285R*
Powders. *See also* Seasonings; Teeth, dentifrice 52, 88, 109, 137, 156-157, 159, 161-162, 192, 226, 266
  body, 51, 64, 89, 109, 195
  foot, 66, 193, *132R*
Pregnancy, 42, 147, 175, 182, *218R*, 239, 246
Premenstrual syndrome, 296
Preserves, 24, *24R*, *94R*, 174, 178, 225
  jam, 16, 18, 24, 80, 83, 91, 94, 100, 103, 146, 178, 179, *182R*, 213, 231
  jelly, 16, 18, 24, 72, 85, 94, 103, 146, 152, 178, 221, 231, 233, 295, 301
  marmalade, 24, 94, 146, 179
Pressing plants, *47R*, *169R*, *251R*
Protein, plants high in, 11, 59, 171, 173, 251, 259, 263, 265, 267, 273, 301
Proud flesh, 175
Pruritus, 35
Psoriasis, 35, 63, 135
Psychic opening, 219
Pudding, plants for making, 83, 156, 174, 179, 221, 225, 226, 230, 231
Puffballs, **115-119**
Purslane family, 206
Pyrola, **120**-122, **121**

Quaking aspen, **56, 67-70**

Rabies, 225
Radioactive materials, 223, 265
Rain flower, 207
Raisin substitutes, 80, 81, 174, 179, 231
Rashes, 24, 29, 149, 199, 218, 304, 309, 319, 320
Raspberry, **174**-176, **175**
Red algae, 258, 260, 265
Refrigerants, 183, 289
Reindeer moss, **220-223, 222**
Relishes, 16, *17R*, 256
Rennet substitutes, 133, 173, 240
Reproductive organs, 175
Respiratory problems, 7, 37, 109, 215
Rheumatism, 9, 21, 49, 59, 63, 72, 75, 86, 88, 109, 141, 147, 149, 168, 186, 239, 243, 254, 278, 285, 296, 298, 301, 317
  traditional remedies for, 47, 78, 114
Rhianthus, **188**-189
Rhodymenia. *See Palmaria*
Rhubarb, substitute, 224, 225, 239
Ribbon kelp, **264**-265
Ribes, **85**-86
Rickets, 114
Ringworm, 39, 64, 199
River beauty, **155**-157, **156**
Rockcress, 314-317, **315**
Rodents, 13, 14, 22, 44, 150, 169
Romanzoffia, **203**
Rooting, to increase, 69
Roots/rootstalks, edible, 8, 11, 14, 28, 32, 39, 43, 53, 112, 156, 195, 206, 211, 228, 243, *243R*, 285, 292, 295
Rope burns, 202
Rosa, **177**-180, **178, 179**
Rose, family, 28, 93, 95, 96, 99, 100, 101, 136, 174, 177, 181, 183, 230
  plant, **177**-180, **178, 179**
  water, 179
Roseroot, **227-229, 228**
Rubber, cultivation, 163, 296
Rubifacients, 316
Rubus, **96-101, 97, 99, 100, 174-175**
Rumex, **237**-241, **239**

Sachets, 180, 216, 247
Saddle sores, 29, 68, 162, 290
Saint John Day. *See* Solstice
Salads
  dressings, 174, 179, *205R*, 238, 278
  gelatin, 123, 201
  plants for making, 6, 10, 11, 29, 63, 72, 97, 100, 103, 107, 112, 116, 123, 124, 134, 137, *141R*, 152, 156, 158, 185, 186, *201R*, 203, 204, 205, *205R*, 206, 225, 228, 238, 261, 262, 267, 269, 271, 275, 278, 284, 289, 294, 303, 307, 311, 313, 315, 319
Salicornia, **275-276**
Salix, **74**-76, **75**
Salmonberry, **96**-98, **97**
Salts of lemon, 240
Salves, 7, 9, 11, 29, 63, 68, *68R*, 89, 121, 124,

147, 149, 153, 159, 162, 199, 202, 225, 240, 247, 289, 290, 292, 301, *308R*, 309, 312, 315, 317, 320
Sambucus, **145**-148, **146**
Sandpaper, substitutes, 299
Sandwich fillings, 29, 177, 185, 206, 259, *272R*, *282R*, 284, 288, 295
Sanguisorba, **136-137**
Sap
for drinking, 62
for external use, 72
Sauces, 24, 91, 123, *125R*, 174, *199R*, 218, 225, 235, 238
spaghetti, 112, 253, *265R*, 278
Sauerkraut, 143, 213, 243, 271, 315
Saunas, 22, 49, 73, 88, 215, 246, 319
switches for, 64, 76, 246
Saxifraga, **203-205, 204**
Saxifrage, family, 85, 192, 203
plant, **203-205, 204**
Scabies, 35
Scalp, infections of, 64, 199
Scirpus, **13**-15, **14**
Scratches, 68, 75, 202, 290, 309
Scurvy, 9, 65, 72, 94, 204, 226, 240, 262, 271, 279, 285
Sea blite, **280**-282, **281**
Sea lettuce, **266**-267
Sea rocket, **283**-285
Seasickness, 37, 128, 132, 144
Seasonings, 41, *42R*, 129, 136, 143, 172, 186, 213, 238, 239, 256, 260, 262, 265, 266, *267R*, 279, 289, 301, 311, 316, 318
bay leaf substitute, 21, 40
pepper substitutes, 117, 213, 267, 278, 311, 318
salt substitutes, 143, 196, 260, 267, 280, 311
spice, 21, 40, 41, 59, 63, 72, 87, 152, 245, 282
Sedatives, 43, 105, 150, 168, 175, 243
Sedge, family, 13, 15
plant, **13**-15, **14**
Sedum, **227-229, 228**
Seeds, edible, 14, 44, 53, 72, 121, 128, 161, 199, 225, 231, 239, 269, 271, 278, 280, 289, 301, 308
to germinate, *34R*, 35, *52R*, 251
oldest, 166
Serviceberry, **208, 230**-232, **231**
Shampoos. *See* Hair
Shelter, 15, 64, 66, 72, 114
Shepherdia, **235-236**
Shepherd's purse, **311-313**
Shield fern, family, 111
plant, **111**-114, **113**
Shock, 132
Shrubby cinquefoil, **28-30**
Shy maiden, 120
Sieves, plants for, 15, 135
Silverberry, **233-234**
Silverweed, **28-30**
Single delight, **120**-122, **121**
Sinuses, clogged, 32, 64, 153, 319
Skin. *See also* Complexion
ailments, 4, 9, 63, 64, 124, 130, 147, 149, 165, 172, 225, 226, 239, 240, 290, 292, 296, 299, 308, 309
dry, 32, 72, 147, 153, 180
eruptions, 24, 64, 121, 175, 195, 228, 292, 299
irritation, 27, 29, 35, 64, 68, 72, 88, 109, 135, 147, 180, 218, 290, 304, 320
moisturizer, 180, 183
oily, 29, 105, 130, 175, 313
sores, festering, 9, 192
Skunk cabbage, **38**-39
Slugs, 247
Smallpox, 29
Smelling salts, 153
Smoking
fish, 60, 69, 213
herbal. *See* Tobacco, substitutes
quitting, 303
Snacks, 6, 14, 85, 91, 97, 100, 103, 107, 123, 139, 141, 146, 156, 177, 182, 201, 230, 238, 239, 251, 253, 256, 258, 259, 262, 264, 273, 289, 303, 307, 308
Snakes
bite, 121, 308
to repel, 114, 154
Snowblindness, 19, 231
Snuff, 41, 89, 130, 150, 293, 321
Soap, plants for making, 72, 114, 153, 154, 276, 281, 282
Soapberry, **235-236**
Solidago, **161-163, 162**
Solstice, 247, 309
Sorbus, **93-95, 94**
Sores, 21, 51, 80, 246, 308

mouth, 54, 63, 76, 80, 122
running, 195, 234
skin, 9, 65, 72, 109, 135
ulcerous, 39, 195
Sorrel, 237-241, **238**
Soups, 14, 21, *27R*, 28, 32, 42, 53, 59, 63, 68, 80, 87, 98, 103, 112, 116, *117R*, 123, 136, *139R*, 142, 143, 152, 156, 159, 161, 172, 179, 182, 185, 186, 192, 194, 201, 204, 206, 212, *221R*, 225, 228, 233, 242, 243, 253, 254, 259, 261, 262, 265, 267, 269, 271, 278, 280, 284, 289, 292, 295, 300, 311, 315, 316
Speedwell, 6, 7
Spells, plants for casting, 141
Sphagnum, **34**-35
Sphagnum, family, 34
moss, **34**-35
Spinning. *See also* Weaving
plants for, 15
Spleen, 114
Spoonwort, **283**-285
Spores, fern, 114
Sprains, 68, 132, 147, 186, 246
Spring beauty, **206-207**
Spruce, **71-73**
Starch, 139, 309
Stellaria, **288**-290, **289**
Sterility, 47, 165, 243
Stimulants, 154, 278, 316, 317
Stinging nettle, 170
Stir-fries, 10, 11, 14, *15R*, 28, 97, *103R*, 117, 142, *144R*, 171, 207, 211, 225, 243, 251, 253, 259, 264, 265, *269R*, 271, 273, *274R*, 278, 289, *290R*, 292, 295, 303, 311
Stomach, disorders, 7, 15, 94, 179
cramps, 43, 91, 214
upset, 21, 24, 41, 43, 59, 68, 86, 92, 144, 153, 156, 221, 240, 246, 292, 304
Stonecrop, family, 227
plant, **227-229, 228**
Strawberry, **181**-183, **182**
Strawberry spinach, **300**-302, **301**
Strength, 88, 105
Streptopus, **102-103**
Stress, 105. *See also* Nerves
Stretch marks, 147, 180
Strewing herbs, 154, 305
String, to make, 15, 76,157, 172
Stroke, 105
Stuffing
fish, 256, 284, 315
poultry, 186, 204, 245, 284
Styptics, 11, 39, 136, 159, 162, 172
Suaeda, **280**-282, **281**
Sulphur shelf, **115-119**
Sunburn, 29, 183, 267
Sundew, family, 36
plant, **36**-37
Suppository, *312R*
Survival fare, 8, 23, 26, 28, 32, 49, 53, 59, 63, 72, 75, 114, 155, 157, 178, 220, 223, 301
Swamp cabbage, **38**-39
Sweet clover, **291-293, 292**
Sweet gale, **40-42, 41**
Swelling. *See also* Inflammation 51, 68, 75, 88, 132, 175, 186, 195, 226, 235, 246, 281, 308
Symbiosis, 118, 220
Symbolism
beauty/love/inspiration, 7, 52, 80, 130, 180, 183
death/rebirth, 64, 76
fortune/luck, 7, 64, 147, 293
political/business, 124, 196
virtue/religious, 54, 64, 125, 130, 183, 293, 309
Syphilis, 78
Syrup, 14, 18, *63R*, 80,124, 174, 179, 180
cough, 7, 72, 124, 179, 195, *196R*

Tanning, 17, 76, 289
Tannins, plants high in, 18, 29, 30, 66, 193, 226, 239, 241
Tapping, 62
Taraxacum, **294**-296, **295**
Tartar, to remove, 175, 183
Tea, beverage, 6, 20, 21, 22, 24, 29, 40, 63, 65, *66R*, 71, 86, 97, 100, 107, 124, 134, *135R*, 146, 152, 156, 161, 174, 177, 178, 182, 195, 214, 231, 254, 289, 295, 303, 304, *305R*
medicinal. *See* specific ailments
Teeth, 12, 159, 299
dentifrice, 153, 215, 240
teething, 303, 304
toothache, 11, 88, 97, 143, 301, 319
Tension, to decrease, 66, *105R*, 243
Thalspi arvense, 314-317, **316**

Thickening agents, 123, 156, 221, 252, 253, 257
Thimbleberry, **96**-98, **97**
Throat ailments, 262
sore throat, 7, 24, 41, 65, 80, 86, 94, 114, 122, 124, 144, 159, 175, 179, 183, 215, 228, 246
strep, 223
Thyroid, 256, 259
Tinctures, 7, 29, 32, *37R*, 43, 51, 68, 75, 80, 91, 110, 129, 134, 144, 162, 189, 195, 223, 225, 245, 278, 281, 285, 289, 296, 298, 312
Tinder, 12, 61, 64, 66, 76, 114, 157, 216
Tobacco, substitutes, 8, *9R*, 92, 130, 154, 163, 172, 180, 189, 196, 216, 218, 247, 260, 293, 321
Toilet paper, 98
Toilet water. *See* Floral waters
Tonics, 9, 41, 59, 63, 87, *88R*, 105, 137, 156, 182, 192, 235, 246, 254, 260, 265, 289, 312
Tonsils, 29
Torches, 11, 12
Touch-me-not family, 198
Trailing raspberry, **99-101**
Trauma, 132
Trifolium, **291**-293
Triglochin, **268-270**
Tsuga, **65-66**
Tuberculosis, 15, 19, 21, 41, 59, 80, 86, 147, 162, 172, 215, 221, 235, 298
Tumors, 134, 299, 312
skin, 39, 59, 135, 254
Tundra rose, 28
Tussilago, 194
Twisted stalk, **102-103**
Typha, **10**-12, **11**

Ulcers, 30, 122, 162, 243, 292
esophagus, 29
leg, 195, 308, 312
mouth, 175, 183
skin, 54, 135, 159, 179
stomach, 7, 27, 88, 159, 225, 298
throat, 183
Ulva, **266**-267
Urinary disorders, 63, 68, 72, 80, 109, 134, 183, 204, 215, 218, 243, 273, 289
Infections, 17, 214
Urtica, **170-173, 171**
Uterus, 32, 179, 279, 303, 319

Vaccinium, **23-25, 79-81**
Vagina, discharge, 63, 175
inflammation, 54, 218
vaginitis, 159, 183
Valeriana, **43-45, 44**
Valerian, family, 43, 44
plant, **43-35, 44**
Veins, 112, 137, 195, 299
Venereal disease, 285
Veratrum, **149**-151, **150**
Vermifuge. *See* Worms
Veronica, **6-7**
Viburnum edule, **90-92**
Vinegar, 59, 63, 123, 146, 153, 172, 174, *175R*, 179, 292
Viola, **123**-125, **124**
Violet, **123**-125, **124**
Viral infections, 278
Virility, 154
Vitamins
A, 94, 112, 152, 156, 171, 178, 182, 204, 206, 228, 259, 263, 271, 273, 278, 295, 301, 315
B, 112, 116, 174, 178, 259, 263, 265, 273, 295, 301, 315
C, 6, 9, 17, 65, 68, 72, 75, 86, 94, 112, 123, 152, 156, 171, 174, 178, 182, 204, 206, 226, 228, 263, 271, 278, 284, 289, 295, 301, 312, 315
D, 116, 171, 295
E, 178
K, 116, 152, 178, 312
Vomiting, to induce, 9, 60, 89, 281

Warts, 32, 37, 76, 180, 199, 240, 296
Water hemlock, **46**-47
Water lily family, 53
Watermelon berry, 102
Water milfoil family, 26
Waterproofing, 157, 173
Water retention, 9
Wax myrtle family, 40
Weaving, 157, 173
Weight loss, 134, 135, *254R*, 265, 289
Whisks, 64
Wild calla, **48-49**
Wild chive, **184-187, 185**
Wild flag, 50

Wild iris, **50**-52, **51**
Wildlife
bears, 17, 19, 39, 81, 144, 165, 181, 210, 217, 226, 272
mountain sheep, 217
rodents, 12, 54, 55, 69, 72, 181, 212, 226, 309, 317
small mammals, 19, 23, 69, 76, 181, 282, 309
Wild mustard, 314-317, **315**
Wild onion, 184-187, **185**
Willow, family, 74
plant, **74**-76, **75**
Wines. *See* Alcoholic beverages
Wintercress, 314-317, **315**
Wintergreen, family, 120, 122
plant, 120
Women, herbs for, 44, 124, 128, 172, 218, 245, 303, 319
Wood
firewood, 60, 64
handicrafts, 69, 76, 148
for paper, 69, 76
preservatives, 66
Woolly lousewort, **242-243**
Worms, to expel, 80, 112, 143, 245
Wormwood, 135, **244**-247, **245**
Wounds, 41, 68, 72, 94, 110, 124, 144, 149, 157, 159, 162, 163, 175, 183, 193, 226, 246, 290, 298, 299, 309, 312, 318
dressings for, 11, 35, 179
Wrinkles, 180

Yarrow, **318**-321, **319**
Yellow pond lily, **53-55, 54**
Yellow rattle, **188**-189

Zygadenus elegans, **184**-187, **185**

Author Janice J. Schofield, a former home economics teacher, is an authority on the wild plants of the North and their many uses. An Alaskan resident for more than two decades, she now resides in New Zealand but migrates periodically to reconnect with her beloved Alaskan flora and friends. A portion of all sales benefits Kachemak Heritage Land Trust, Alaska's first land trust, which is working to preserve habitat for wildlife and native plants.

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In the more than thirty years artist Richard W. Tyler has resided in Alaska, he has traveled the state extensively, completing a collection of plant drawings that includes many heretofore missed species. He lives in Homer, where he continues to draw and paint watercolors of the region's scenery and flowers.

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When Janice J. Schofield migrated to the Alaskan Bush, where she lived miles from a grocery store, she began to wonder about the possibilities of the wild harvest outside her cabin door. Out of six years of comprehensive field tests, and from anecdotes and wisdom gleaned from fellow plant enthusiasts and experts, she has brought together a lively compendium of information about the trees, roots, wildflowers, herbs, seaweed, and mushrooms of the North—from Alaska and the Yukon, through western Canada, to Washington, Oregon, and northern California.

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